Alexander A. Balandin
Professor

Degrees

Ph.D., Electrical Engineering, University of Notre Dame, USA, 1997
M.S., Electrical Engineering, University of Notre Dame, USA, 1995
M.S., Applied Physics, Moscow Institute of Physics and Technology, Russia, 1991
B.S., Mathematics, Moscow Institute of Physics and Technology, Russia, 1989

University of California, Riverside: Employment History

Assistant Professor of Electrical Engineering, step IV, 7/1/1999
Associate Professor of Electrical Engineering, step I, 7/1/2001
Associate Professor of Electrical Engineering, step III, 7/1/2003
Professor of Electrical Engineering, step II, 7/1/2005

Other Professional Experience

Visiting Professor, Department of Engineering, University of Cambridge, UK (2005)
Editor-in-Chief, Journal of Nanoelectronics and Optoelectronics (JNO), 2005 - present
Editorial Board Member, Journal of Nanoscience and Nanotechnology (JNN), 2001 – present
Research Engineer, University of California, Los Angeles, California, 1997-1999
Research Associate, University of Nebraska, Lincoln, Nebraska, 1996-1997
Research Assistant, University of Notre Dame, Notre Dame, Indiana, 1993-1996
Research Assistant, Moscow Institute of Physics and Technology, Russia, 1989-1993

Consulting and Patents

Consultant for Raytheon, California; CFD Research Corporation, Alabama; PO Corporation, California; Nanomaterials, Arizona

Publications

1. V.A. Fonoberov and A.A. Balandin, "Phonon confinement effects in hybrid virus-inorganic nanotubes for nanoelectronic applications," *Nano Letters*, **5**: 1920 (2005).
2. W.L. Liu, K. Alim, A.A. Balandin, D.M. Mathews and J.A. Dodds, "Assembly and characterization of hybrid virus-inorganic nanotubes," *Appl. Phys. Lett.*, **86**: 253108 (2005).
3. K. Alim, V.A. Fonoberov and A.A. Balandin, "Origin of optical phonon frequency shifts in ZnO quantum dots," *Appl. Phys. Lett.*, **86:** 053103 (2005).
4. V.A. Fonoberov and A.A. Balandin, "Ultraviolet photoluminescence in ZnO quantum dots: Confined excitons vs. surface-bound excitons," *Appl. Phys. Lett.*, **85:** 5971 (2004).
5. V.A. Fonoberov, K.A. Alim, A.A. Balandin, F. Xu and J.L. Liu, "Photoluminescence investigation of the carrier recombination processes in ZnO quantm dots and nanocrystals," *Phys. Rev. B*, **73**: 1 (2006).

Professional Societies

Institute of Electrical and Electronics Engineers (IEEE); American Physical Society (APS); Electrochemical Society, Inc.; American Sociaty for the Advancement of Science (AAAS); International Society for Optical Engineering (SPIE); Materials Research Society (MRS)

Honors and Awards

- Associate Scholar, Pembroke College, Cambridge University, 2005
- US Office of Naval Research (ONR) Young Investigator Award, 2002
- National Science Foundation (NSF) Faculty CAREER Award, 2001
- University of California Regents Faculty Award, 2000
- Merrill Lynch Innovative Research Award, World Trade Center, New York, 1998
- US Civilian Research Foundation (CRDF) Young Investigator Award, 1998
- Outstanding Teaching Assistant Award, University of Notre Dame, 1995
- Eta Kappa Nu Engineering Honor Society, 1994
- Summa Cum Laude Graduate, Moscow Institute of Physics and Technology, 1991

Service

University and Public Service

- UCR Academic Senate Committee on Research, 2006 - present
- EE Undergraduate Advisor and Undergraduate Committee Chairman, 2003 - present
- ABET2000 Committee representative for EE Department, 2003-2005
- UCR College of Engineering (COE) Dean Search Committee member, 2004 - 2005
- UCR *ad hoc* committee member for tenure promotion cases, 2002 - 2004
- EE Faculty Search Committee member, 1999-2003
- UCR Focus Group on Nanotechnology member, 1999 - 2005

Highlights of Professional Service

- Program Committee, SPIE International Symposium on Fluctuations & Noise, 2002 - present
- Conference Chairman, Noise in Electronic Devices & Circuits, 3rd SPIE Int'l Symposium on Fluctuations & Noise, Austin, USA Texas, 2005
- Conference Session Chairman, Noise in GaN Devices, 2nd SPIE Int'l Symposium on Fluctuations & Noise, Las Palmas, Canary Islands, Spain, 2004
- Conference Session Co-Chairman (with E. Yablonovitch, UCLA), Int'l Symposium on Quantum Confinement, San Francisco, California, USA, 2001
- Advisory Board member, Book Series Advances in Nanoscale Materials & Nanotechnology, 2000 - present
- Editor, Noise and Fluctuations Control in Electronic Devices (ASP, Los Angeles, 2002).
- Co-Editor (with K.L. Wang, UCLA), 5-Volume Handbook of Semiconductor Nanostructures and Nanodevices (ASP, Los Angeles, 2006)
- Reviewer for about 20 technical journals in the field
- Member of 4 Review Panels at the National Science Foundation (NSF)
- Reviewer for US Dept. of Energy; UC MICRO; Foundation for Advancement of Science

Matthew Barth
Professor

Degrees

Ph.D., Electrical Engineering, UC Santa Barbara, 1990
M.S., Electrical Engineering, UC Santa Barbara, 1986
B.S., Electrical/Computer Eng., University of Colorado, Boulder CO, 1984

University of California, Riverside, Service

Assistant Research Engineer, I, 12/16/1991
Assistant Adjunct Professor, 7/1/1994
Associate Adjunct Professor, 7/1/1997
Associate Professor, I, 7/1/1998
Associate Professor, II, 7/1/2000
Associate Professor, III, 7/1/2002
Professor, I, 7/1/2004

Other Professional Experience

1989-91. Visiting Researcher, Department of Systems Engineering, Faculty of Engineering Science, Osaka University, Japan.
1985-89. Graduate Research Assistant, Electrical Engineering and Center for Robotic Systems in Microelectronics, University of California, Santa Barbara.
1985-86. Member of the Technical Staff, Advanced Technology Division, General Research Corporation, Santa Barbara, CA.
1979-84. Undergraduate Research Assistant, Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder.

Consulting and Patents

8 patents filed with the U.S. Patent Office

Publications (Journal only, last 5 years)

J. Du, J. Masters, and M. Barth (2005) "Next Generation Automated Vehicle Location Systems: Positioning at the Lane-Level", (in press) IEEE Transactions on Intelligent Transportation Systems.

M. Barth, J. Collins, G. Scora, N. Davis, and J. Norbeck (2006) "Measuring and Modeling Emissions from Extremely Low Emitting Vehicles", in press, *Transportation Research Record*, Journal of the Transportation Research Board, National Academy of Science.

Xu, H., and M. Barth (2006) "Travel Time Estimation Techniques for Traffic Information Systems Based on Inter-Vehicle Communications", in press, *Transportation Research Record*, Journal of the Transportation Research Board, National Academy of Science.

Barth, M. S. Shaheen, T. Fukuda, and A. Fukuda (2006) "Carsharing and Station Cars in Asia: An Overview of Japan and Singapore", in press, *Transportation Research Record*, Journal of the Transportation Research Board, National Academy of Science.

Davis, N., J. Lents, M. Osses, N. Nikkila, and M. Barth (2005) "Development and Application of an International Vehicle Emissions Model", in press, *Transportation Research Record*, Journal of the

Transportation Research Board, National Academy of Science.

Chen, C., Q. Jing, H. Wang, H. Pan, L. Li, C. Huang, J. Zhao, Y. Dai, H. Huang, M. Barth, and N. Nikkila (2005) "Testing Research on Real World Emissions Characteristics of Heavy Duty Vehicles and Influencing Factors", *Acta Scientiae Circumstantiae*, 25(7) : 870—87.

Giannelli, R., E. Nam, K. Helmer, T. Younglove, G. Scora, and M. Barth (2005) "Heavy-Duty Diesel Vehicle Fuel Consumption Modeling Based on Road Load and Power Train Parameters" SAE World Congress, 2005.

Younglove, T., G. Scora, M. Barth (2005) "Designing On-Road Vehicle Test Programs for Effective Vehicle Emission Model Development", in press, *Transportation Research Record*, Journal of the Transportation Research Board, National Academy of Science.

Professional Societies

Institute of Electrical and Electronic Engineers (IEEE)

- Member of Intelligent Transportation System Society
- Member of Robotics and Automation Society
- Member of Vehicular Technology Society

Transportation Research Board

- Member of Transportation Air Quality Committee
- Member of Advanced Public Transportation Committee
- Chairman of Carsharing and Station Car Committee

Air & Waste Management Association

Honors and awards

Discover Magazine Awards for Technological Innovation, National Finalist 2001.
National Science Foundation, Japan Society for the Promotion of Science Post-Doctoral Research Fellowship
Japan Monbusho, Grant in aid for Encouragement of Young Scientists Research Grant
Tau Beta Pi, Outstanding Teaching Assistant in Electrical & Computer Eng.
NASA, Public Service Group Achievement Award
Senior Member, IEEE, 12/2000

Service (Major positions, last 5 years)

Associate Director, College of Engineering-Center for Environmental Research and Technology (CE-CERT), 1998-2004
Director, College of Engineering-Center for Environmental Research and Technology (CE-CERT), 2004-present
Executive Committee Member, California PATH Program [2000 – present]
Executive Committee Member, University of California Energy Institute [1998 – present]

Professional Development

Participation in Youth Protection Training

Gerardo Beni
Professor

Degrees

Ph.D., Theoretical Physics, UCLA, 1974
Laurea, Physics, Universita di Firenze, 1970

University of California, Riverside, Service

Professor, VI, 7/1/1991

Consulting and Patents

Patents

1. US patent pending: "Blending and Interactive Animation Method for Sign Language" 64145-00-US 12264-84 (filed on September 1st 2005). Inventors: Nicoletta Adamo-Villani, Gerardo Beni, Ronnie Wilbur.
2. US patent pending: "Device and Method of Keyboard Input and Uses Thereof" 64146-00-US 12264-087 (filed on September 1st 2005). Inventors: Nicoletta Adamo-Villani, Gerardo Beni.

Selected Publications (Journal articles only)

1. H.Yamaguchi, T.Arai, G.Beni, "A distributed control scheme for multiple robotic vehicles to make group formations," Robotics and Autonomous Systems, 36, 4, 125-147, 2001.
2. N. Adamo-Villani,G. Beni, "Automated Fingerspelling by Highly Realistic 3D Animation," British Journal of Educational Technology, 35, 3, 345-362, 2004.
3. N. Adamo-Villani, G. Beni, "A new method of hand gesture configuration and animation," Journal of Information, 7, 3, 367-386, 2004.
4. N. Adamo-Villani, G. Beni, "An interactive computer animation method for learning instrument grasp," Journal of Information, 8, 1, 89-108, 2004. Symposia/Conference Proceedings
5. N. Adamo-Villani, G. Beni, "Teaching Mathematics in Sign Language by 3D Computer Animation," Information Society and Education: Monitoring a Revolution, International Conference on Information and Communication Technologies, 2, Badajoz, Spain, November 2002, 918-921, 2002.
6. N. Adamo-Villani, G. Beni, "Keyboard Encoding of Hand Gestures," Proceedings of HCI International 10th International Conference on Human-Computer Interaction, 2, Crete, Greece, June 2003, 571-575, 2003.
7. N. Adamo-Villani, G. Beni, "Design and benchmarking of Human-Computer Interface for keyboard encoding of hand gestures," Proceedings of EPFL, IST, IEEE First International Workshop on Interactive Rich Media Content, Lausanne, Switzerland, October 2003, 149-159, 2003.
8. N. Adamo-Villani, G. Beni, "Grasp and release using keyboard user interface," Proceedings of IMG04 - International Conference on Intelligent Manipulation and Grasping, Genova, Italy, July 2004, 72-76, 2004.

9. N. Adamo-Villani, G. Beni, “Keyboard encoding of facial expressions,” IEEE proceedings of IV04 - 8th international conference on information visualization-HCI symposium, London, England, July 2004, 324328, 2004.
10. N. Adamo-Villani, G. Beni, “Keyboard controlled signing semantroid,” 8th International Conference on Control, Automation, Robotics and Vision, Kunming, China, December 2004, 741-746, 2004. Symposia/Conference Proceedings (In Press)
11. N. Adamo-Villani, G. Beni, “Sign Language Subtitling,” March, Siggraph 2005 – Educators Program, Los Angeles, CA, August 2005, 5 m.s.p., 2004. Symposia/Conference Proceedings (Submitted)
12. N. Adamo-Villani, G. Beni, “Reconfigurable keyboard for gesture control,” September, HCI International-11th International Conference on Human-Computer Interaction, Las Vegas, NV, July 2005, 5 msp, 2004.
13. N. Adamo-Villani, and G. Beni. "An interactive computer animation method for learning instrument grasp". Journal of Information, Vol. 8, No. 1, pp. 89-108.
14. N. Adamo-Villani and G. Beni, (2005). "Sign Language subtitling by highly comprehensible 'semantroids'. British Journal of Educational Technology (submitted).
15. N. Adamo-Villani, Beni, G., White, J. (2005). "EMOES: Eye Motion and Ocular Expression Simulator" IJIT - International Journal of Information Technology (submitted).

Professional Societies

- Jun. 1982-To Present: American Physical Society (Fellow)
- Jun. 1999-To Present: American Association for Advancement of Science (Fellow)

Honors and awards

U.S. Government (I.C.A.) sponsored lectureship tour in Brazil (1979) on Physics of Energy Technology
American Physical Society (APS) Fellow, 1982
Distinguished Member of Technical Staff, AT&T Bell Laboratories, 1983
Journal of the Year award for Journal of Robotic Systems, 1984
Listed in Who's Who in America, since 1988
Who's Who in the World, since 1992
Fellow, American Association for the Advancement of Science (AAAS), 1999

Service

- 2000- date: Digital Arts Committee. This committee involved our college and CHASS
- 2000- 2002: Executive Committee
- Jun.-Sep. 2000: Chair of Building Committee for Engineering II
- 2001- 2003: Scholarship Committee
- 2002- 2004: Breadth Committee
- 2002- 2003: Ad hoc subcommittee of College of Engineering Executive Committee
- 2002- 2004: Committee on Committees

Bir Bhanu
Professor; Director of Center for Research in Intelligent Systemse

Degrees

Ph.D., Electrical Engineering, Image Processing Inst. USC, 1981
M.B.A., Business Management, UCI, 1984
E.E., Electrical Engineer, Massachusetts Institute of Technology, 1977
S.M. Electrical Eng. & Computer Science, Massachusetts Institute of Technology, 1977
M.E. (Distinction), Electronics Engineering, Birla Inst. of Technology & Science, 1974
B.S. (Hons), Electronics Engineering, Inst. of Technology, BHU, 1972
2-yr Diploma, German, Institute of Technology, BHU, 1971

University of California, Riverside, Service

Professor, III (OS), 1/1/1991
Professor, IV (OS), 7/1/1993
Professor, V (OS), 7/1/1996
Professor, VI (OS), 7/1/1998
Professor, VII (OS), 7/1/2001
Professor, VIII (OS), 7/1/2003
Professor, IX (OS), 7/1/2006

Other Professional Experience

1986-1991. Honeywell Inc. Senior Honeywell Fellow.

1981-1991. University of Utah. Associate Professor of Computer Science. Leave of absence for the academic year 1986-1987.

1981-1984. Ford Aerospace & Communications Corp. Engineering Specialist.

1980-1981. INRIA, Rocquencourt, France. Research Fellow.

1978. IBM Research Laboratory, San Jose, CA. Academic Associate, Computer Science Department.

Consulting and Patents

Eleven U.S. and International Patents and over 250 reviewed publications, including over 90 Journal Papers, in Computer Vision, Pattern Recognition and Learning. Served as consultant to Exxon Mobil, Northrop Grumman, TRW, Ford, etc.

Registrations

None

Publications

1. B. Bhanu, Y. Lin and K. Krawiec, "*Evolutionary Synthesis of Pattern Recognition Systems,"*

Springer, 2005.

2. B. Bhanu and X. Tan, "*Computational Algorithms for Fingerprint Recognition,"* Kluwer Academic Publishers, 2003.

3. P. Yin, B. Bhanu, K. Chang and A. Dong, "Integrating relevance feedback techniques for image retrieval using reinforcement learning," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 27, No. 10, pp. 1536-1551, Oct. 2005.

4. X. Tan and B. Bhanu, "Fingerprint matching using genetic algorithms," *Pattern Recognition,* Vol. 39, No. 3, pp. 465-477, March 2006.

5. J. Han and B. Bhanu, "Individual recognition using gait energy image," *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 28, No. 2, pp. 316-322, February 2006.

Professional Societies

Fellow – IEEE, AAAS, IAPR and SPIE for contributions in computer vision, pattern recognition, learning, and education.
Senior Honeywell Fellow – Honeywell Inc.
Member – ACM, AAAI

Honors and awards

Honeywell Awards for Engineering Excellence, 1987-90
Honeywell SRC Alpha Team Award on DARPA Scene Dynamics Program, 1989
Honeywell MOTEC Award for Technical Excellence, 1989
Award for the Most Outstanding Paper Published(1989) in J. Pattern Recognition, 1990
Award and plaque from President & Chief Operating Officer at Honeywell in Recognition of Eng. Expertise & Achievement on a patented idea "Inertial Navigation Sensor Integrated Obstacle Detection System", 1992
Certificate of Appreciation for Outstanding Service, IEEE Computer Society, June 1997
Award for Outstanding Papers Published (1998) J. Pattern Recognition
Research Excellence Award, BCOE, UCR, 11/2003

Service

Chair/Co-Chair of several IEEE Conferences and Workshops; Member, Committee on Educational Policy; Chair, Recruiting Committee, Member, Committee on Eminent Scholars

Professional Development

Paper presentations in many conferences; Many invited presentation; Guest Editor, IEEE Trans. on SMC, Special Issue on Learning in Computer Vision and Pattern Recognition.

Jie Chen
Professor and Chair

Degrees

Ph.D., Electrical Engineering, University of Michigan, 1990
M.A., Mathematics, University of Michigan, 1987
M.S.E., Electrical Engineering, University of Michigan, 1985
B.S., Aerospace Engineering, Northwestern Polytechnic University, China, 1982

University of California, Riverside, Service

Assistant Professor, II, 1/1/1994
Assistant Professor, III, 7/1/1995
Assistant Professor, IV, 7/1/1996
Associate Professor, II, 7/1/1997
Professor, I, 7/1/1999
Professor, II, 7/1/2002
Professor, III, 7/1/2004

Other Professional Experience

Research Fellow, 1/1/1991-12/31/1993, Georgia Institute of Technology, Atlanta, Georgia

Consulting and Patents

None.

Registrations

None.

Publications

K. Gu, V.L. Kharitonov, and J. Chen, Stability of Time-Delay Systems, Birkhauser, 2003.

J. Chen and G. Gu, ``Worst-case asymptotic properties of H-infinity identification," *IEEE Trans. on Circuits and Systems, Part 1: Fundamental Theory and Application*, vol. 49, no. 4, April 2002, pp. 437-446.

O. Toker, J. Chen, and L. Qiu, ``Tracking performance limitations in LTI multivariable discrete-time systems," *IEEE Trans. on Circuits and Systems, Part 1: Fundamental Theory and Application*, vol. 49, no. 5, May 2002, pp. 657-670.

J. Chen, S. Hara, and G. Chen, ``Best tracking and regulation performance under control energy constraint," *IEEE Trans. on Automatic Control*, vol. 48, no. 8, Aug. 2003, pp. 1320-1336.

W. Su, L. Qiu, and J. Chen, ``Fundamental performance limitations in tracking sinusoidal signals," *IEEE Trans. on Automatic Control*, vol. 48, no. 8, Aug. 2003, pp. 1371-1380.

W. Liu and J. Chen, ``Model invalidation in L-1 using frequency-domain data," *IEEE Trans. on Automatic Control*, vol. 49, no. 6, June 2004, pp. 983-989.

R.H. Middleton, J. Chen, and J.S. Freudenberg, ``Tracking sensitivity and achievable H-infinity performance in preview control," *Automatica*, vol. 40, no. 8, Aug. 2004, pp. 1297-1306.

K. Gu, S.I. Niculescu, and J. Chen, ``On stability crossing curves for general systems with two delays," *Journal of Mathematical Analysis and Applications*, vol. 311, 2005, pp. 231-253.

W. Liu, J. Chen, and H. El-Sherief, ``Probabilistic bounds for L-1 uncertainty model validation," to appear, *Automatica*.

Professional Societies

IEEE; IEEE Control Systems Society.

Honors and awards

Best Paper Presentation Award, 1993 American Control Conference, San Francisco, CA, June 1993
Adjunct Professor, by invitation, Northwestern Polytechnic University, China, 1994 – Present
UCR Regents Fellowship Award, UCR, 1995
National Science Foundation Career Award, 1996
SICE International Award, 2004
Guest Professor, Zhejiang University, China, 1997 – present
Visiting Fellow, Tokyo Institute of Technology, Tokyo, Japan, July 2000
Visiting Associate Professor, Hong Kong University of Science and Technology, Hong Kong, P.R. China, January - June 2000
Guest Professor, Dalian Institute of Technology, Dalian, P.R. China, 8/2001 – present
Visiting Fellow, School of Quantitative Methods and Mathematical Sciences, University of Western Sydney, Penrith, Australia, May-June, 2004.
Adjunct Professor, Harbin Institute of Technology-Shenzhen Graduate School, Shenzhen, P.R. China, since April 2004.

Service

Department Chair, Electrical Engineering, University of California, Riverside
Founding Editor-in-Chief, Journal of Control Science and Engineering, since April 2006.
Guest Editor, IEEE Control Systems Magazine, since August 2005.
Associate Editor, Automatica, since March 2004.
Associate Editor, Journal of Control Theory and Applications, since March 2004.
Guest Editor, IEEE Transactions on Automatic Control, August 2001--August 2003.
Associate Editor, IEEE Transactions on Automatic Control, January 1997--December 2000.

Ilya Dumer
Professor

Degrees

Ph.D., Information Theory, Inst. Info. Transmission Problems, Russian Academy, 1981
M.Sc., Electronics Devices, Moscow Institute of Physics and Technology, 1976

University of California, Riverside, Service

Professor, I, 11/1/1995
Professor, II, 7/1/2001
Professor, III, 7/1/2004

Other Professional Experience

Consulting and Patents

Registrations

Publications
Over 100 refereed papers and conference proceedings.

Principal publications of last five years
I. Dumer, D. Micciancio, and M. Sudan, "Hardness of approximating the minimum distance of a linear code," IEEE Trans. Info. Theory, vol. 49, no. 1, pp. 22-37, 2003.

I. Dumer, V. Prelov, and M. Pinsker, "On the coverings of an ellipsoid in the Euclidean space," IEEE Trans. Info. Theory, vol. 50, no. 10, pp. 2348-2356, 2004.

S. Yekhanin and I. Dumer, "Long nonbinary codes exceeding the Gilbert Varshamov bound for any fixed distance," IEEE Trans. Info. Theory, vol. 50, no. 10, pp. 2357-2362, 2004.

I. Dumer, "Soft decision decoding of Reed-Muller codes: a simplified algorithm," IEEE Trans. Info. Theory, vol. 52, no. 3, pp. 954-963, March 2006.

I. Dumer and K. Shabunov, "Soft decision decoding of Reed-Muller codes: recursive lists," IEEE Trans. Info. Theory, vol. 52, no. 3, pp. 1260-1266, March 2006.

Professional Societies

IEEE

Honors and awards

Royal Society Guest Research Fellow, UK, 1992-1993

Alexander von Humboldt Research Fellow, Essen, Germany, 1993-1994

Service

Member of UCR Committee on Research
Member of UCR COSSA Committee
College of Engineering Executive Committee, Vice-Chair
EE Graduate adviser

Hossny El-Shereif
Adjunct Professor

Degrees

PhD Electrical Engineering, McMaster University, Canada, 1979
MS Electrical Engineering, McMaster University, Canada, 1977
BS Applied Mathematics (honors), Ain Shams University, Egypt, 1975
BS Electrical Engineering (honors), Cairo University, Egypt, 1973

University of California, Riverside, Service

Adjunct Professor, Electrical Engineering Department, University of California, Riverside (1996 to present)

Teaching classes in digital signal processing, digital control and microelectronics circuits. *Received 6.4 out of 7.0 for the past two years for the student evaluation of teaching.*

Other Professional Experience

Assistant Professor, Electrical Engineering Department, University of Petroleum and Minerals (1979 to 1981)

Taught courses in control systems, state estimation, electronics. Conducted research and advised Master Thesis on the subject of system identification.

Teaching Assistant, Electrical Engineering Department, McMaster University (1975 to 1979)

Taught courses in control systems and nonlinear computer aided design.

Lecturer, Department of Physical Sciences, Cairo University (1973 to 1975)

Taught courses in calculus, physics and descriptive geometry.

Industrial Work History and Experience

Northrop Grumman Mission Systems (Formerly TRW), 1987 – Present
Senior Manager, Electronics and Software Engineering Center
Held several management positions leading to my current position as a Senior Center Manger. Center is responsible for requirement development, design, analysis, test and integration of guidance, controls and navigation systems, radar and antenna systems, GPS systems, dynamic modeling and simulation, software IV&V, for ICBMs and target launch vehicles. Job requires budget and resource management in support of multiple tasks/customers, extensive customer's interface including project reviews, design reviews and flight readiness reviews.

Accomplishments and additional responsibilities:
Hired and mentored over 15 engineers in the past three years from top tier universities.

Personally led the Center efforts for IV&V in the areas of guidance and controls and software for over 40 successful target launch vehicles.

Served on several Air Force source selection activities and flight test failure investigations.

Led the G&C sections of several new business efforts, Targets and Counter Measures proposal, Land Based ICBM white paper, FALCON and Modular guidance PRDA.

Established a strong guidance and controls section. Provided technical leadership for the development of several analysis and design tools including the Universal Flight Simulation (UFS) and the Kalman filter based post flight guidance performance evaluation tool.

Managed the Division's Independent Research and Development (IR&D) program (1996 to 2002), assisted Division General Manger in selecting projects, developed Division's IR&D roadmap and reviewed projects progress and final reports.

Senior Systems Engineer, Odyssey program (1997), led the Division effort's in supporting the Company funded Odyssey telecommunication program.

Led the design, integration and flight test of the first GPS translator system (1992 to 1994) on two successful Peacekeeper test flights.

Exxon Production Research Company (1981 to 1987)
Group leader and Research Engineering specialist.
Led the activities of the modeling development group. Activities included research and development of advanced algorithms for digital signal processing, modeling and simulation of seismic data. Developed innovative (proprietary) inverse modeling technique to predict oil and gas from seismic surface data measurements. Developed innovative (proprietary) optimal pulse estimation and deconvolution algorithms for digital seismic data enhancement. Developed user-based software packages for seismic data processing.

Publications

Published over 60 technical papers in journals and conferences on digital signal processing, GPS, modeling and simulation, guidance and control.

Professional Societies, Awards, and Honors

- Senior member IEEE.
- Received Six Sigma Green Belt Certification, 2002.
- Received the TRW 1995 Chairman's Award for innovation nomination.
- Received the TRW 1994 IR&D Honor Roll Achievement Award.
- Member Advisory Board, Electrical Engineering Departments at the University of California, Riverside, California State University, Long Beach and University of Nevada, Reno.

Jay Farrell
Professor

Degrees

Ph.D., Electrical Engineering, University of Notre Dame, 1989
M.S., Electrical Engineering, University of Notre Dame, 1988
B.S., Physics, Iowa State University, 1986
B.S., Electrical Engineering, Iowa State University, 1986

University of California, Riverside, Service

Assistant Professor, III,	7/1/1993
Assistant Professor, IV,	7/1/1995
Associate Professor, I,	7/1/1997
Associate Professor, III,	7/1/1999
Professor, I,	7/1/2001
Professor, II,	7/1/2003

Other Professional Experience

CHARLES STARK DRAPER LABORATORY
Senior Member of Technical Staff June 1989 - January 1994

Publications

W. Li, J.A. Farrell, R.T. Cardé, "Tracking of Fluid-Advected Odor Plumes: Strategies Inspired by Insect Orientation to Pheromone," *Adaptive Behavior*, 9, 3/4, 143-170, 2001.

J.Y. Choi, J.A. Farrell, "Adaptive observer based backstepping control using neural networks," *IEEE Transactions on Neural Networks*, vol 12, no. 5, pp. 1103-1112, 2002.

J. Stoev, J.-Y. Choi, J.A. Farrell, "Adaptive control for output feedback nonlinear systems in the presence of modeling errors," *Automatica*, 38, 10, 1761-1767, 2002.

J.A. Farrell, J. Murlis, W. Li, R.T. Carde, "Filament-Based Atmospheric Dispersion Model to Achieve Short Time-Scale Structure of Odor Plumes," *Environmental Fluid Mechanics*, vol. 2 2002, pp. 143-169, 2002.

Y. Yang, J.A. Farrell, "Magnetometer and Differential Carrier Phase GPS aided INS for Advanced Vehicle Control," *IEEE Trans. Robotics and Automation*, 19, 2, 269-183, 2003.

Y. Yang, J.A. Farrell, "Two Antenna GPS aided INS for Attitude Determination," *IEEE Trans. on Control Systems Technology*, 11, 6, 905-918, 2003.

J.A. Farrell, S. Pang, W. Li, "Plume Mapping via Hidden Markov Methods," *IEEE Trans. SMC-B*, 33, 6, 850-863, 2003.

J.A. Farrell, H.S. Tan, Y. Yang, "Carrier Phase GPS-aided INS based Vehicle Lateral Control," *ASME Journal of Dynamics Systems, Measurement, & Control*, 125, 3, 339-353, 2003.

J. A. Farrell, M. Polycarpou, M. Sharma, "Longitudinal Flight Path Control using On-line Function Approximation," *AIAA Journal of Guidance, Control and Dynamics*, 26, 6, 885-897, 2003.

J. Nakanishi, J. A. Farrell, S. Schaal, "Composite Adaptive Control with Locally Weighted Statistical Learning," *Neural Networks*, 18, 1, 71-90, 2005.

J. A. Farrell, S. Pang, W. Li, "Chemical Plume Tracing via an Autonomous Underwater Vehicle," *IEEE J. of Oceanic Engineering*, 30, 2, 428-442, 2005.

J. A. Farrell, M. Sharma, M. Polycarpou, "On-line Approximation Based Fixed-Wing Aircraft Control," March, *AIAA Journal of Guidance, Control and Dynamics*, 28, 6, 1089-1102, 2005.

J. A. Farrell, M. M. Polycarpou. "Adaptive Approximation Based Control: Unifying Neural, Fuzzy and Traditional Adaptive Approximation Approaches", John Wiley, 436 pp., 8 chapters, 2006.

Professional Societies

IEEE Senior Member

Honors and awards

Notre Dame Center for Applied Mathematics Fellowship
Charles Stark Draper Laboratory Recognition Award, May 1991
Engineering Vice President's Annual Award for Best Technical Publication, 1990
Charles Stark Draper Laboratory Recognition Award, May 1993
Distinguished Service Award, Association for Unmanned Vechicle Systems, June 28 - 30, 1993, Washington, D.C.

Service

Financial Chair	2001 IEEE Conference on Decision & Control	1999 – 2002
Program Comm.	2001 IEEE International Symp. on Intelligent Control	2001
Financial Chair	2003 IEEE Conference on Decision & Control	2000 – 2004
Member	IEEE Control Systems Society Board of Governors	2003 – 2006
Program Comm.	2005 IEEE International Symp. on Intelligent Control	2005
Vice President, Finance	IEEE Control Systems Society	2005 – 2006
Vice President, Tech. Act.	IEEE Control Systems Society, nominated 2006 for 2006-2008 term	

Dr. Vladimir Fonoberov
Postdoctoral Researcher / Lecturer

Degrees

Ph.D., Theoretical Physics, MSU, 12/2002
M.S., Physics, MSU, 06/1999

University of California, Riverside, Service

Postdoctoral Research:
Department of Electrical Engineering, University of California, Riverside, 05/2003-present

Teaching:
Electronic Circuits (EE 100B), 2 quarters
Logic Design (EE/CS 120A), 4 quarters
Engineering Electromagnetics (EE 116), 1 quarter
Electrical and Electronic Circuits (EE 002), 1 quarter

Other Professional Experience

Postdoctoral Research:
Department of Physics, University of Antwerp, Belgium, 2002-2003

Publications

1. V. A. Fonoberov, K. A. Alim, A. A. Balandin, F. X. Xiu, and J. L. Liu, "Photoluminescence investigation of the carrier recombination processes in ZnO quantum dots and nanocrystals," *Physical Review B* 73, 165317 (9 pages), 2006.
2. V. A. Fonoberov and A. A. Balandin, "Phonon confinement effects in hybrid virus-inorganic nanotubes for nanoelectronic applications," *Nano Letters* 5, pp. 1920-1923, 2005.
3. K. A. Alim, V. A. Fonoberov, and A. A. Balandin, "Origin of the optical phonon frequency shifts in ZnO quantum dots," *Applied Physics Letters* 86, 053103 (*3 pages*), 2005.
4. V. A. Fonoberov and A. A. Balandin, "Interfacial and confined optical phonons in wurtzite nanocrystals," *Physical Review B* 70, 233205 (*4 pages*), 2004.
5. V. A. Fonoberov and A. A. Balandin, "Origin of ultraviolet photoluminescence in ZnO quantum dots: Confined excitons versus surface-bound impurity exciton complexes," *Applied Physics Letters* 85, pp. 5971-5973, 2004.
6. V. A. Fonoberov and A. A. Balandin, "Radiative lifetime of excitons in ZnO nanocrystals: The dead-layer effect," *Physical Review B* 70, 195410 (*5 pages*), 2004.
7. V. A. Fonoberov, E. P. Pokatilov, V. M. Fomin, and J. T. Devreese, "Photoluminescence of tetrahedral quantum-dot quantum wells," *Physical Review Letters* 92, 127402 (*4 pages*), 2004.

8. V. A. Fonoberov, E. P. Pokatilov, and A. A. Balandin, "Exciton states and optical transitions in colloidal CdS quantum dots: shape and dielectric mismatch effects," *Physical Review B* 66, 085310 (*13 pages*), 2002.
9. E. P. Pokatilov, V. A. Fonoberov, V. M. Fomin, and J. T. Devreese, "Electron and hole states in quantum dot quantum wells within a spherical eight-band model," *Physical Review B* 64, 245329 (*7 pages*), 2001.
10. E. P. Pokatilov, V. A. Fonoberov, V. M. Fomin, and J. T. Devreese, "Development of an eight-band theory for quantum dot heterostructures," *Physical Review B* 64, 245328 (*16 pages*), 2001.

Professional Societies

Member of the American Physical Society

Honors and awards

Best Poster Award, MARCO FENA Annual Review, Los Angeles, California, 2005
NSF-NATO Fellowship Award in Science and Engineering, 2003-2004
Conference Young Investigator Awards:
ICPS-27, Flagstaff, Arizona, 2004
American Vacuum Society, Kailua-Kona, Hawaii, 2004
The Minerals, Metals & Materials Society, Santa Barbara, California, 2002
German Physical Society, Regensburg, Germany, 2000
Merit Scholarship of the Soros Foundation, 1997-1999
UNESCO Award in Physics, 1997-1998

Service

Reviewer for journals:
Physical Review Letters
Applied Physics Letters
Physical Review B
Journal of Applied Physics
Journal of Physical Chemistry B
Applied Surface Science
Superlattices and Microstructures
IEEE Transactions on Nanotechnology

Reviewer for agencies:
U.S. Army Research Office
North Carolina Biotechnology Center
Petroleum Research Fund
U.S. Civilian Research & Development Foundation

Peilin Fu
Lecturer

Degrees

Ph.D., Systems Engineering and Engineering Management, The Chinese University of Hong Kong, Hong Kong, 2003
M.E., Electronic Engineering, Ocean University of China, China, 1999
B.E., Automatic Control, Qingdao University of Science and Technology, China, 1996

University of California, Riverside, Service

Lecturer, 10/1/2005
Lecturer/Posdoc Researcher, 6/1/2004

Other Professional Experience

Research Associate, Department of Electrical and Electronic Engineering, Hong Kong University of Science and Technology, 9/1/2003 – 5/30/2004
Teaching/Research Assistant, Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong, 9/1/1999 – 8/30/2003
Advisor of senior project design, Department of Systems Engineering and Engineering Management, the Chinese University of Hong Kong, 2001
Research Assistant, Department of Electronic Engineering, Ocean University of China, China, 9/1/1996-6/30/1999
Lecturer (part-time), Qingdao Zhongda Chemical Fibre Co., Ltd., Qingdao, China, 1998
Lecturer (part-time), Department of Computer Science, Ocean University of China, 1997 – 1998

Consulting and Patents

Reviewer, IEEE Transactions on Automatic Control, IEEE Control Systems Magazine, Automatica, International Journal of Control, IEE Proc. Control Theory and Applications, IFAC World Congress, American Control Conference, IEEE Conference of Decision and Control, identify consulting work and patents

Publications

Book Chapter

1. D. Li, F. Qian and P. Fu, "Variance minimization in stochastic systems," in *Stochastic Modeling and Optimization with Applications in Queues, Finance and Supply Chains*, eds. D. Yao, H. Zhang and X. Zhou, Springer, New York, 2002, pp. 311-332.

Journal Papers

1. P. Fu, J. Chen and S.-I. Niculescu, "To Cross or not to Cross: Stability Switches of Linear Systems with Commensurate Delays", submitted to *IEEE Transaction on Automatic Control*.
2. D. Li, F. Qian and P. Fu, "Optimal nominal dual control for discrete-time linear-quadratic Gaussian problems with unknown parameters," submitted to *Automatica*.

3. P. Fu, S.-I. Niculescu and J. Chen, "Generalized eigenvalue-based stability tests for 2-D linear systems: necessary and sufficient conditions," accepted by *Automatica*.
4. P. Fu, S.-I. Niculescu and J. Chen, "Stability of linear neutral time-delay systems: exact conditions via matrix pencil solutions," accepted by *IEEE Transactions on Automatic Control*.
5. D. Li, F. Qian and P. Fu, "Research on dual control," ACTA Automatica Sinica, Vol. 31, No. 1, pp. 32-42, 2005.
6. D. Li, F. Qian and P. Fu, "Variance minimization approach for a class of dual control problems," *IEEE Transactions on Automatic Control*, Vol. 47, No. 12, pp. 2010-2020, December 2002.
7. G. Tang, P. Fu and L. Wang, "A predictive stabilization approach of first-order systems with time delay," *Journal of Shandong University*, Vol. 34, No. 3A, pp.11-13, 1999.

Conference Papers (selected)

1. P. Fu, S.-I. Niculescu and J. Chen, "Stability of linear neutral time-delay systems: exact conditions via matrix pencil solutions," *Proceedings of 2005 American Control Conference*, Portland, OR, June, 2005, pp. 4259-4264.
2. S.-I Niculescu, P. Fu and J. Chen, "Stability switches and reversals of linear systems with commensurate delays: a matrix pencil characterization," *Proceedings of the 16th IFAC World Congress,* Prague, Czech Republic, July, 2005.
3. P. Fu, X. Zhao and L. Qiu, "Solution to the Nehari problem using the Routh table," *Proceedings of the 12th Mediterranean Conference on Control and Automation*, Kusadasi, Turkey, June, 2004.

Professional Societies

Women in Control
IEEE Control Society

Honors and awards

Panelist (with Chancellor Córdova) of Women Faculty and Engineers Panel, University of California, Riverside, 2005

Nominee, Teaching Excellence Award, Bourns College of Engineering, University of California, Riverside, 2005.

Excellent Postgraduate Student Award, Ocean University of China, 1998

Excellent Research Work and Paper Award, Ocean University of China, 1997.

Excellent Undergraduate Student Award, Qingdao University of Science and Technology, 1996.

"Ke Ji Xing Hua" Scholarship, Ministry of Chemical Industry, P.R. China, 1995.

Honor Student of Shandong Province, Shandong Province, P. R. China, 1994.

1st-class Academic Performance Scholarship, Qingdao University of Science and Technology, 1992-1996.

Service

International Program Committee Member, The Eighth IASTED International Conference on Control and Applications, May 24-26, 2006, Montreal, Canada

Susan Hackwood
Professor

Degrees

Ph.D., Solid State Ionics, DeMontfort University, Leicester, U.K., 1979
B.Sc(Hons), Combined Sciences, DeMontfort University, Leicester, U.K., 1976

University of California, Riverside, Service

Professor, III, 1/1/1990
Professor, IV, 7/1/1993
Professor, V, 7/1/1996

Other Professional Experience

2005	Visiting Associate in Engineering at the California Institute of Technology.
2005	Visiting Scholar, Sandia National Laboratory, California.
2003-2005	Visiting Scholar, Anderson School of Management, UCLA
1995-date	Executive Director, California Council on Science and Technology. Modeled in part after the National Research Council and teamed with the National Academies, CCST advises the state on all policy matters that have a technology component. CCST conducts research and analyses, convenes meetings and contributes directly to public policy in California at the state and federal level. Also, Professor Electrical Engineering, University of California, Riverside.
1990-95	Founding Dean, College of Engineering, University of California, Riverside. Professor of Electrical Engineering. Research interests in distributed asynchronous sensing, robot-human interface, multimedia computer visualization.
1984-89	Professor of Electrical and Computer Engineering, University of California, Santa Barbara. Research interests include image processing and cellular robotic systems. Founder and director of the Center for Robotic Systems in Microelectronics.
1984	Department Head, Robotics Technology Research, AT&T Bell Laboratories, Holmdel, N.J. Research interests in sensor systems, high precision, intelligent, multi-robot systems for IC manufacturing.
1983-84	Supervisor, Device Robotics Research, AT&T Bell Laboratories, Holmdel, N.J. Research interests in robot sensory integration for inspecting and handling III-V lasers with 10μm precision.
1982-83	Member of technical staff, robotics, AT&T Bell Laboratories. Research interests in integrated robot sensors, including tactile sensors, fiber optic imaging sensors, and magnetic proximity sensors. Designed, built and installed sensory system for first intelligent robot used in handling lightwave devices in AT&T.
1979-81	Member of technical staff, device physics, AT&T Bell Laboratories.
1979-82	1976-79 Research on high-energy density Solid State Batteries for mobile robots and computer modeling of transducers.

Consulting and Patents

- Bourns Inc.
  Chair of New Product Development Committee
  Founder and Member of Technology Advisory Council
  Strategic planning team member
- Integrated Media Systems Center USC and Institute for Information Industries, Taiwan
  Producing strategic plan for building Taiwan's networked multi-media industry
- Comision Asesora en Alta Tecnologia, CAATECH Costa Rica Assessing e-readiness and technology capability

Publications

CALIFORNIA COUNCIL ON SCIENCE AND TECHNOLOGY: CCST serves as the principal science and technology advisory body for the State of California. Current activities are listed on the CCST website (www.ccst.us).

Professional Societies

PROFESSIONAL ASSOCIATION BOARDS

1998 AAAS Fellow

- 2006 AAAS Chair-Elect of the Section on Societal Impacts of Science and Engineering
- 2005 AAAS Member of the Advisory Committee of the AAAS Center for Advancing Science & Engineering Capacity
- 2003 AAAS Member of the Committee of Science, Engineering and Public Policy
- 2001 AAAS Engineering Delegate

1998 IEEE Fellow

- 2006 Member of the Editorial Board, *IEEE Spectrum*

- 2000 Member ASEE Publications Policy Committee
- 1991 Editorial Advisory Board Member, *International Journal of Environmentally Responsible Manufacturing,* ECM Press, Albuquerque, New Mexico
- 1990 Member, Editorial Board, *Mechatronics, an International Journal*, (Pergamon Press)
- 1989 Associate Editor, *Manufacturing Review* (ASME)
- 1984-2005 Co-founder and Editor of the *Journal of Robotic Systems* (John Wiley)

Honors and awards

- 2003 Distinguished Service Award, Center for Environmental Engineering Research, UCR
- 2000 Inland Empire Women of Distinction Award for Innovation
- 1999 "Women Who Make a Difference Award", UCR Chancellor's Committee on Status of Women
- 1998 National Athena Award for professional achievement, community service, and for actively assisting women in their attainment of professional excellence
- 1998 Fellow AAAS, Engineering Delegate 2000-2002

Yingbo Hua
Professor

Degrees

Ph.D., Electrical Engineering, Syracuse University, Syracuse, New York, 1988.
M.S., Electrical Engineering, Syracuse University, Syracuse, New York, 1983.
B.S., Control Engineering, Nanjing Institute of Technology, Nanjing, Jiangsu, China, 1982.

University of California, Riverside, Service

Professor, I, 2/20/2001
Professor, II, 7/1/2003
Professor, IV, 7/1/2004

Other Professional Experience

Research Fellow, Syracuse University, Syracuse, New York, 1988 – 1989, consulting for Syracuse Research Corp., Syracuse, NY, and Aeritalia Corp, Italy.

Faculty Member, University of Melbourne, Australia, 1990-2001.

Associate Professor and Reader (1996 – 2000),

Senior Lecturer (1993 – 1995),

Lecturer (1990 – 1992).

Project Leader of Statistical Signal Processing with Australian Cooperative Research Center for Sensor Signal and Information Processing, 1993-2000.

Visiting Faculty, Hong Kong University of Science and Technology, Hong Kong, 1999-2000.

Consultant, Microsoft Research, Redmond, WA, in July-Aug 2000.

Consulting and Patents

Consulted for Syracuse Research Corp, Syracuse, NY, Aeritalia Corp, Italy, Australian Defence Science and Technology Organization, Australia, and Microsoft Research, Redmond, WA.

Registrations

None

Publications in past 5 years:

16 journal papers in IEEE Transactions on Signal Processing and other journals.
5 book chapters
31 conference papers
3 edited book volumes

Professional Societies

Fellow of IEEE, 2002- present.
Senior Member of IEEE, 1992-2001.
Member of IEEE, 1988-1991.
Student Member of IEEE, 1986 –1987.

Honors and awards

Chinese Government Scholarship for Overseas Graduate Study, 1983-1984
Syracuse University Graduate Fellowship (available to 1% of ECE graduate students at Syracuse), 1985 – 1986
Six Australian Research Council Awards (equivalent to NSF awards in US), 1990 – 2001
Visiting Faculty, Hong Kong University of Science and Technology, 1999 – 2000
Three NSF Awards, 2002 – 2006
IEEE Fellow, 2002 – present

Service

Books: Giannakis, G.; Hua, Y.; Stoica, P., and Tong, L., eds (2001) *Signal Processing Advances in Wireless and Mobile Communications*, Volumes 1-2, Prentice-Hall. Hua, Y.; Gershman, A.; and Cheng, Q., eds. (2003). *High Resolution and Robust Signal Processing,* Marcel Dekker.

Associate Editor, IEEE Transactions on Signal Processing, 1994 - 1997, 2001 – 2002;

Associate Editor, IEEE Signal Processing Letters, 1998 - 2002.

Editor, EUROSIP Journal of Signal Processing, 2005-.

Guest Editor, IEEE Signal Processing Magzine, 2005-2006.

Member, IEEE SPS Technical Committee for Signal Processing for Communications, 2002 – 2004, 2005-;

Member, IEEE SPS Technical Committee for Sensor Array and Multi-channel Signal Processing (1998 - 2001, 2002 –2004, 2005-);

Member, IEEE SPS Technical Committee for Underwater Acoustic Signal Processing (1997 - 1998).

Member, University of California's Industry and University Cooperative Research Program Executive Committee for Communications and Networking (2005-).

Member, Editorial Committees of numerous international conferences.

Reviewer, numerous international journals.

Alexander Korotkov
Associate Professor

Degrees

Ph.D., Physics, Moscow State University, Russia, 1991
M.S.(Cum Laude), Physics, Moscow State University, Russia, 1986

University of California, Riverside, Service

Associate Professor, III, 7/1/2004
Associate Professor, II, 7/1/2002
Assistant Professor, IV, 7/1/2000

Other Professional Experience

SUNY Stony Brook (1993-1996, 1998-2000) : Postdoc, Research scientist, Research Assistant Professor
Moscow State University (1987-1993, 1996-1998) Senior Technician, Engineer, Scientist, Senior Scientist

Visiting positions: NEC, Japan (02.97-05.97), Researcher
Universite de la Mediterranee, France (12.97-03.98, 06.98-08.98), Visiting Professor

Consulting and Patents

Registrations

Publications (last 5 years)

62. A. N. Korotkov, "Continuous measurement of entangled qubits", Phys. Rev. A 65, 052304, pp. 1-5 (2002).

63. R. Ruskov and A. N. Korotkov, "Quantum feedback control of a solid-state qubit", Phys. Rev. B 66, 041401(R), pp. 1-4 (2002).

64. A. N. Korotkov, "Analysis of integrated single-electron memory operation", J. Appl. Phys. 92, No. 12, 7291-7295 (2002

65. R. Ruskov and A. N. Korotkov, "Spectrum of qubit oscillations from Bloch equations", Phys. Rev. B 67, 075303, pp. 1-8 (2003).

66. R. Ruskov and A. N. Korotkov, "Entanglement of solid-state qubits by measurement", Phys. Rev. B 67, 241305(R), pp. 1-4 (2003).

67. A. N. Korotkov, "Nonideal quantum detectors in Bayesian formalism", Phys. Rev. B 67, 235408, pp. 1-11 (2003).

68. V. O. Turin and A. N. Korotkov, "Analysis of the radio-frequency single-electron transistor with large quality factor", Appl. Phys. Lett. 83, No. 14, 2898-2900 (2003).

69. K. K. Yadavalli, A. O. Orlov, G. L. Snider, and A. N. Korotkov, ”Single electron memory devices: Towards background charge insensitive operation”, J. Vac. Sci. Technol. B 21, no. 6, 2860-2864 (2003).

70. V. O. Turin and A. N. Korotkov, “Numerical analysis of radio-frequency single-electron transistor operation”, Phys. Rev. B 69, 195310, pp. 1-13 (2004).

71. W. Mao, D. V. Averin, R. Ruskov, and A. N. Korotkov, ”Mesoscopic quadratic quantum measurements”, Phys. Rev. Lett. 93, 056803, pp. 1-4 (2004).

72. R. Ruskov, K. Schwab, and A. N. Korotkov, “Quantum nondemolition squeezing of a nanomechanical resonator”, IEEE Trans. Nanotechnology 4, No. 1, 132-140 (2005).

73. D. V. Averin and A. N. Korotkov, “Comment on Continuous quantum measurement: inelastic tunneling and lack of current oscillations”, Phys. Rev. Lett. 94, 069701 (2005).

74. A. N. Korotkov, "Quantum feedback of a double-dot qubit", Microelectronics Journal 36, 253-255 (2005).

75. A. N. Korotkov, "Simple quantum feedback of a solid-state qubit", Phys. Rev. B 71, 201305(R), pp. 1-4 (2005).

76. R. Ruskov, K. Schwab, and A. N. Korotkov, “Squeezing of a nanomechanical resonator by quantum nondemolition measurement and feedback", Phys. Rev. B 71, 235407, pp. 1-19 (2005).

77. Q. Zhang, R. Ruskov, and A. N. Korotkov, "Continuous quantum feedback of coherent oscillations in a solid-state qubit," Phys. Rev. B 72, 245322, pp. 1-11 (2005).

78. Y. A. Kinkhabwala, V. A. Sverdlov, A. N. Korotkov, and K. K. Likharev, "A numerical study of transport and shot noise in 2D hopping," J. Phys.: Condens. Matter 18, 1999-2012 (2006).

79. R. Ruskov, A. N. Korotkov, and A. Mizel, "Quantum Zeno stabilization in weak continuous measurement of two qubits," Phys. Rev. B 73, 085317, pp. 1-17 (2006).

Professional Societies

APS, IEEE

Honors and awards

Service (last 5 years)

Reviewer for Physical Review Letters, Physical Review B, Physical Review E, Applied Physics Letters, IEEE Transactions on Nanotechnology, IEEE Transactions on Electron Devices, Journal of Low Temperature Physics, IEEE Journal of Selected Topics in Quantum Electronics, Fluctuation and Noise Letters, Quantum Information Processing
Grant proposal reviewer for NSF, DOE, UC-SMART, CRDF

Member/Chair of EE Search committee graduate committee, Member of Physics Search committee, Member of EE graduate committee, Member of the EE Staff Search Committee
Faculty member of the Center for Nanoscale Science and Engineering, Member of the UCR Registration Fee Committee, Member of the UCR Committee on Planning and Budget, Member of the UCR Academic Senate Committee on Library

Roger Lake
Associate Professor

Degrees

Ph.D., Electrical Engineering, Purdue University, 1992
M.S.E.E., Electrical Engineering, Purdue University, 1988
B.S.E.E., Electrical Engineering, Purdue University, 1986

University of California, Riverside, Service

Associate Professor, I, 7/1/2000
Associate Professor, III (OS), 7/1/2004

Other Professional Experience

1997-2000. Raytheon Systems, Applied Research Laboratory. Member, Technical Staff.
1993-1997. Texas Instruments, Corporate Research Laboratory. Member, Technical Staff.

Consulting and Patents

P. R. Berger, P. E. Thompson, R. Lake, K. Hobart, S. L. Rommel, "Si-Based Resonant Interband Tunneling Diodes and Method of Making Interband Tunneling Diodes". US 6,803,598.

Publications

C. Rivas, R. Lake, G. Klimeck, W. R. Frensley, M. V. Fischetti, P. E. Thompson, S. L. Rommel, P. R. Berger, "Full-band simulation of indirect phonon assisted tunneling in a silicon tunnel diode with delta-doped contacts," *Appl. Phys. Lett.*, 78, (6), 814-816, 2001.

R. Lake, J. Yang, "A physics based model for the RTD quantum capacitance," *IEEE Transactions on Electron Devices*, 50, (3), 785-789, 2003.

C. Rivas, R. Lake, W.R. Frensley, G. Klimeck, P.E. Thompson, K.D. Hobart, S.L. Rommel, P.R. Berger, "Full Band Modeling of the Excess Current in a Delta-Doped Silicon Tunnel Diode," *Journal of Applied Physics*, 94, 8, 5005-5013, 2003.

N. Jin, S.Y. Chung, A.T. Rice, P.R. Berger, R. Yu, P.E. Thompson, R. Lake, "151 kA/cm2 peak current densities in Si/SiGe resonant interband tunneling diodes for high power mixed signal applications," *Applied Physics Letters*, 83, 16, 3308-3310, 2003.

Y. Zheng, R. Lake, "Self-Consistent Transit-Time Model for a Resonant Tunnel Diode," *IEEE Transactions on Electron Devices*, 51, 4, 535-541, 2004.

S. Chung, N. Jin, P. Berger, R. Yu, P. Thompson, R. Lake, S. L. Rommel, S. Kurinec, "Three-terminal Si-based negative differential resistance circuit element with adjustable peak-to-valley current ratios using a monolithic vertical integration.," *Applied Physics Letters*, 84, 14, 2688-90, 2004.

Y. Zheng, C. Rivas, R. Lake, K. Alam, T. B. Boykin, G. Klimeck, "Electronic properties of Silicon nanowires," *IEEE Transactions on Electron Devices*, 12, 10, 1097-1103, 2005.

K. Alam, R. Lake, "Performance of 2 nm gate length carbon-nanotube field effect transistors with source/drain underlaps," *Appl. Phys. Lett.*, 87, 1, 073104(1-3), 2005.

K. Alam, R. Lake, "Leakage and performance of zero-Schottky-barrier carbon nanotube transistors," *Journal of Applied Physics*, 98, 6, 064307(1-8), 2005.

N. Bruque and R. R. Pandey and R. Lake and H. Wang and J. Lewis, "Electronic Transport Through a CNT-Pseudopeptide-CNT Hybrid Material," Molecular Simulation, 31(12), 859-864 (2005).

R. R. Pandey and N. Bruque and K. Alam and R. Lake, "Carbon nanotube - molecular resonant tunneling diode," Phys. Stat. Sol. (a), 203(2) R5-R7 (2006).

Professional Societies

IEEE, APS, and MRS

Honors and awards

Semiconductor Research Corporation Fellowship, 9/88 - 8/92.
Senior Member, IEEE, 2001-

Service

Technical Program Committee Member, 2004, 2005, and 2006 Device Research Conferences.
International Editorial Board Member, Journal of Nanoelectronics and Optoelectronics, American Scientific Publishers
Associate Editor, IEEE Transactions on Nanotechnology, IEEE.
EE Graduate Student Advisor

Professional Development

- **Sep. 2002-Dec. 2002**: Attended the quarter long program, Mathematics in Nanoscale Science and Engineering, at the Institute of Pure and Applied Mathematics, UCLA.
- **Jun. 2005**: Attended the Summer School on Computational Materials Science, University of Illinois at Urbana-Champaign, June 13-23, 2005.
- **Oct. 2005**: Attended "Workshop III: Density-Functional Theory Calculations for Modeling Materials and Bio-Molecular Properties and Functions – A Hands-On Computer Course," at the Institute for Pure and Applied Mathematics, UCLA, Oct. 30 – Nov. 5, 2005.

Ping Liang
Associate Professor

Degrees

Ph.D., Electrical Engineering, University of Pittsburgh, 1987
M.S.E.E., Electrical Engineering, University of Pittsburgh, 1983
B.S., Computer Science and Engineering, Xian Jiaotong University, China, 1982

University of California, Riverside, Service

Assistant Professor, IV, 1/1/1992
Associate Professor, II, 7/1/1995
Associate Professor, III, 7/1/1997

Other Professional Experience

CEO and Founder, TransDimension Inc., a fables semiconductor and embedded software company, 1997 to 2002.

Consulting and Patents

1. US 7,035,948 B1, System and Method for USB Controllers, April 25, 2006
2. US 7,028,126 B1, Universal Serial Bus for Mobile Devices having Expansion Modules, April 11, 2006
3. US 7,003,613 B1, System for Transferring Data Using a USB Host System with a Dedicated Processor, Feb. 21, 2006
4. US 6,954,616 B2, Top-Level Controller for Wireless Communication Devices and Protocols, Oct. 11, 2005
5. US 6,742,076 B2, USB Host Controller for Systems Employing Batched Data Transfer, May 25, 2005

Ten more patent applications pending

Registrations

State(s) in which registered: NONE

Publications

1. Z.Zhuo, P.Liang, A highly efficient parallel algorithm for h.264 video encoder, accepted by 2006 IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP).
2. Z.Zhuo, P.Liang, Data Partition for Wavefront Parallelization of H.264 Video Encoder, accepted by 2006 IEEE International Symposium on Circuits and Systems (ISCAS).
3. Z.Zhuo, P.Liang, A frame-level data re-use & mode decision strategy for H.264/AVC encoders, accepted by 2006 IEEE International Sympsium on Multimedia over Wireless.

Professional Societies

IEEE

Honors and awards

1. Outstanding Paper cited for "superior quality and high technical merit" and selected for videotaping for IEEE satellite education programs at the Second IEEE Conf. on Artificial Intelligence and Applications, Miami, Florida, Dec. 1985.
2. Outstanding Paper at the Third IEEE Int. Electronic Manufacturing Technology Symposium, Anaheim, CA, Oct. 1987.

Service

EE department Faculty Search Committee, 2004 to 2005

Jianlin Liu
Assistant Professor

Degrees

Ph.D., Electrical Engineering, UCLA, 2003
Ph.D., Physics, Nanjing University, 1997
B.S., Physics, Nanjing University, 1993

University of California, Riverside, Service

Assistant Professor, II, 3/7/2003
Assistant Professor, III, 07/01/05

Other Professional Experience

1997-2003. University of California, Los Angeles. Staff Research Associate (1997-99), Ph.D. candidate, Device Research Laboratory (1999-2003).

1993-1997. Nanjing University, China. Graduate Research Assistant, Physics Department.

Consulting and Patents

N/A

Registrations

State(s) in which registered

Publications

1. "High-mobility Sb-doped P-type ZnO by Molecular Beam Epitaxy"
   F. X. Xiu, Z. Yang, L. J. Mandalapu, D. T. Zhao, J. L. Liu, and W. P. Beyermann
   Appl. Phys. Lett. 87, 152101(2005)

2. "Self-aligned $TiSi_2$/Si heteronanocrystal nonvolatile memory"
   Yan Zhu, Dengtao Zhao, Ruigang Li, and Jianlin Liu
   Appl. Phys. Lett. 88, 103507(2006)

3. "p-type behavior from Sb-doped ZnO heterojunction photodiode"
   L. J. Mandalapu, F. X. Xiu, Z. Yang, D. T. Zhao, and J. L. Liu
   Appl. Phys. Lett. 88, 112108(2006)

4. "Simulation of a Ge-Si Hetero-Nanocrystal Memory"
   D. T. Zhao, Y. Zhu, R. G. Li, and J. L. Liu
   IEEE Trans. on Nanotechnology, 5, 37(2006)

5. “p-type ZnO films with solid-source phosphorus doping using molecular beam epitaxy”
F. X. Xiu, Z. Yang, L.J. Mandalapu, J. L. Liu, and W. Beyermann
Appl. Phys. Lett. 88, 052106(2006)

Professional Societies

Member of Institute of Electrical and Electronics Engineers (IEEE) and Member of American Physics Society (APS).

Honors and awards

One of the Top 100 National PhD Theses of China, 2001
Regents' Faculty Fellowship Award, June 2004

Service

EE undergraduate committee
College scholarship committee
College material concentration committee
UCR materials and engineering building committee
IASTED conference international advisory board member

Professional Development

In the last two years, I have attended and presented at least the following papers:

1. “ZnO based hetero- and homo-junction photodetectors”
L. J. Mandalapu, F. X. Xiu, Z. Yang, D. T. Zhao, Y. Zhu, and J. L. Liu
NAMBE, 2005, Santa Barbara, September 10-13, 2005

2. “P-type ZnO films by Sb doping in molecular beam epitaxy”
F. X. Xiu, Z. Yang, L. J. Mandalapu, D. T. Zhao, and J. L. Liu
NAMBE, 2005, Santa Barbara, September 10-13, 2005

3. “Silicide/Si hetero-nanocrystal nonvolatile flash memory”
Jianlin Liu, Dengtao Zhao, and Yan Zhu
ISDRS 2005, Bethesda, MD, December 7-9, 2005

4. “ZnO growth on Si with low-temperature ZnO buffer layers by ECR-assisted MBE”
F. X. Xiu, Z. Yang, D. T. Zhao, J. L. Liu, K. Alim, A. A. Balandin, M. Itkis, and R. Haddon
EMC 2005, Santa Barbara, California, June 22-24, 2005

5. “p-type ZnO by Sb doping for PN-junction photodetectors”
J. L. Liu, F. X. Xiu, L. J. Mandalapu, and Z. Yang
Photonics West 2006, San Jose, USA, Jan 21-26, 2006

Ilya Lyubomirsky
Assistant Professor

Degrees

Ph.D., Electrical Engineering, Massachusetts Institute of Technology, Cambridge, MA, 1999
M.S., Electrical Engineering, Massachusetts Institute of Technology, Cambridge, MA, 1994
B.S., Electrical Engineering, University of Maryland at College Park, 1991
B.S., Mathematics, University of Maryland at College Park, 1991

University of California, Riverside, Service

Assistant Professor, III, 7/1/2003
Assistant Professor, IV, 7/1/2005

Other Professional Experience

After obtaining his Ph.D. in 1999, Ilya took an interest in the Internet, and high-speed networking. He researched voice-over-packet (VOP) networks at Telcordia Technologies, and went on to a successful involvement in Silicon-Valley metro-networking startup ONI Systems Inc. Most recently, he led the research and product development of an ultra-dense wavelength division multiplexing (UDWDM) fiber-optic transmission system at CIENA Corp.

Publications

I. Lyubomirsky, "Coherent Detection for Optical Duobinary Communication Systems," *IEEE Phot. Tech. Lett.,* vol. 18, pp. 868-870, 2006.

I. Lyubomirsky and C.-C. Chien, "Ideal Duobinary Generating Filter for Optically Amplified Systems," *IEEE Phot. Tech. Lett.,* vol. 18, pp. 598-600, 2006.

I. Lyubomirsky and C.-C. Chien, "Tailoring the Duobinary Pulse Shape for Optimum Performance," *IEEE J. Lightwave Tech.*, vol. 23, pp. 3732-3736, 2005.

I. Lyubomirsky and C.-C. Chien, “Experimental Demonstration of an Optimized Optical RZ-Duobinary Transmission System,” *IEEE Phot. Tech. Lett.,* vol. 17, p. 2757, 2005.

I. Lyubomirsky, "Dual-DPSK-OOK Transceiver for Free-Space Optical Networks," *IEEE/LEOS Summer Topical Meetings*, paper TuA3.3, San Diego, 2005.

I. Lyubomirsky and C.-C. Chien, “Optical Duobinary Spectral Efficiency versus Transmission Performance: Is There a Tradeoff?,” *CLEO/QELS*, paper JThE72, Baltimore, 2005.

I. Lyubomirsky and C.-C. Chien, “Experimental Demonstration of a Theoretically Optimum Optical Duobinary Transmission System,” *OFC*, paper OME53, Anaheim, 2005.

I. Lyubomirsky and C.-C. Chien, "DPSK Demodulator Based on Optical Discriminator Filter," *IEEE Phot. Tech. Lett.,* vol. 17, p. 492, 2005.

I. Lyubomirsky and B. Pitchumani, "Impact of Optical Filtering on Duobinary Transmission," *IEEE Phot. Tech. Lett.,* vol. 16, p. 1969, 2004.

I. Lyubomirsky and M. Y. Frankel, "On the Beating of ASE and XPM Noise in Optical Receivers," *IEEE Phot. Tech. Lett.,* vol. 15, p. 1588, 2003.

I. Lyubomirsky, T. Qiu, J. Roman, M. Nayfeh, M. Y. Frankel, and M. G. Taylor, "Interplay of Fiber Non-linearity and Optical Filtering in Ultra-Dense WDM," *IEEE Phot. Tech. Lett.,* vol. 15, p. 147, 2003.

I. Lyubomirsky, J. Roman, S. Shetty, and M. Y. Frankel, "Optimum 10 Gb/s NRZ Receiver Bandwidths for Ultra-Dense WDM," *IEEE Phot. Tech. Lett*., vol. 14, p. 870, 2002.

Professional Societies

Member IEEE, OSA, and SPIE

Honors and awards

Honors Senior Summer Scholarship, 1990
Strauss Teaching Assistant Award, 1990 – 1991
Higginbotham Mathematics Award, 1991
Best Undergraduate Thesis in Engineering Award, 1991
Fannie and John Hertz Graduate Fellowship, 1991 – 1997

Service

EE Chairman of ABET Committee, Member of EE Selection Committee, Reviewer for IEEE Photonics Technology Letters, and IEEE/OSA Journal of Lightwave Technology.

Professional Development

Ilya developed several new courses at UCR, including a unique laboratory based undergraduate course on fiber-optic communications, and a graduate course on advanced electromagnetics.

Mihrimah Ozkan
Assistant Professor

Degrees

Ph.D., Electrical & Computer Engineering, UC-San Diego, 2001
M.S., Materials Science & Engineering, Stanford University, 1994
M.S., Metallurgical Engineering, University of Illinois at Urbana – Champaign, 1991
B.S., Metallurgical Engineering, Middle East Technical University (METU), Turkey, 1988

University of California, Riverside, Service

Assistant Professor, II, 7/1/2001
Assistant Professor, III, 7/1/2003
Assistant Professor, IV, 7/1/2005

Other Professional Experience

2001-present. University of California, San Diego, Department of Electrical and Computer Engineering. **Visiting Scientist**.

2002 (summer). Max Planck Institute, Stuttgart, Germany. **Invited Research Fellow**.

1997-2001., University of California, San Diego. **Research Assistant**, Electrical and Computer Engineering Department.

1995-1997. Applied Materials Inc., Santa Clara, CA. **Process Development Engineer.**

1994-1995. Analog Devices Inc., Santa Clara, CA. **Process Engineer.**

June-Sept. 1994. Acuson, Mountain View, CA. **Co-op engineer, t**ransducer development group.

Jan.-Oct. 1994. IBM Almaden Research Center, San Jose, CA. **Co-op engineer.**

Consulting and Patents

UC Case No.: 2003-161-1, "a new technology for molecular beacon arrays", UC Case: 2003-014: “quantum dot molecular beacons as dna probes”, Other patents: 6.Patent disclosures: 25.

Selected Recent Publications

1. S. Ravindran, C. Tsai, K.V. Singh, S. Andavan G.T., Y. Gao, **M. Ozkan**, E. Hu, C.S.Ozkan, "Nano-patterned liquid metal electrode for the synthesis of novel prussian blue nanotubes and nanowires," August, Nanotechnology, 18 manuscript pages, 2005
2. Y. Bongyoung, R. Hendricks, **M. Ozkan**, N. Myung, "Three-Dimensional Alumina," October, Electrochimica Acta, 15mp, 2005.
3. N.G. Portney, G. Destito, M. Manchester, **M. Ozkan**, "Hybrid Assembly of CPMV Viruses and Surface Characteristics of Different Mutants," August, current topics in microbiology and immunology, 29 mp, 2005 (in press) **(Invited Contribution)**

4. N.G. Portney, **M. Ozkan**, "Perspectives in Bionanotechnology: Drug Delivery, Imaging, and Sensing," Analytical and Bioanalytical Chemistry Special Issue of Nanoparicles in Bioanalysis, 15 mp., 2005. (in press) **(Invited Contribution)**
5. B. Shao, S. Zlatanovic, **M. Ozkan**, A. Birkbeck and S. Esener, "Manipulation of Microspheres and Biological Cells with Multiple Agile VCSEL Traps," June, Sensors and Actuators B, 10 m.p., 2005. (in press)

Honors and awards

Biomaterials Session Graduate Student Novel Research Award: Materials Research Society, Boston (2000)
Graduate Student Award: Bio Medical Engineering Society, Seattle, WA (2000)
Jacobs School of Engineering Best Poster Award, San Diego (2001)
Graduate Student Award: Jacobs School of Engineering, San Diego (2001)
Who's Who in Science and Engineering (2002, 2003)
Regent's Faculty Fellowhsip/Faculty Development Award (2002)
Academic Senate Award (2002)
Invited Research Fellow, Max-Plank Institute, Stuttgart (2002)
Grand Research Poster Award: Jacobs School of Engineering, San Diego (2002)
Best Research Poster in Bioengineering: Jacobs School of Engineering, UCSD, 2002
Visionary Science Award: BioMEMS and Biomedical Nanotechnology Conf., 2003
By invitation, a US-team member in US-Japan Nanotechnology in Advanced Therapy and Diagnosis Symposium, Yokohama Japan, 200
"Achievement in Technical Ingenuity" Award, Inland Empire Economic Partnership, 2003
"Research Leadership Recognition Award" from CORE 21, 2003
Travel Award from Association for Lab Automation, 2003
Regents' Faculty Development Award, June 2004
Invited Speaker at the "National Engineers Week", February 2004
Emerging Scholar Award, American Association of University Women (AAUW), 2005

Service

2004 Symposium Organizer, SPIE Optics East, "Nano-Sensing: Materials and Devices," PA.
2003 Symposium Organizer; ACS conference in New Orleans, "Biological Applications of Nanomaterials and Nanotechnology Symposium."
2003 Scientific Advisory Board member: BioMEMS and Biomedical Nanotech World 2003 Conference, Washington DC
2003 Faculty mentor for Society of Women Engineers UCR-Chapter
2003 Editor; Kluwer's BioMEMS and Nanotechnolgy Encyclopedia
2002 Editor; *Journal of Biomedical Microdevices* by Kluwer.
2002 Editor; *Journal of Sensors and Actuators* B by Elseiver.
2002 Professional Board Member; International Society for BioMEMS and Nanotechnology Society.
2002 Participating faculty; Interdisciplinary Graduate Program in Cell, Molecular and Developmental Biology in UCR.
2002 UC LEADS faculty mentor for undergraduates.
2002 American Society of Women Engineers Mentor.

Amit Roy Chowdhury
Assistant Professor

Degrees

Ph.D., Electrical and Computer Eng., University of Maryland, College Park, 2005
M.E., Systems Science and Automation, Electrical Eng., Indian Institute of Science, Bangalore, India, 1997
B.E., Electrical Eng., Jadavpur University, Calcutta, India, 1995

University of California, Riverside, Service

Assistant Professor, II, 1/1/2004
Assistant Professor, III, 7/1/2005

Other Professional Experience

Center for Automation Research, University of Maryland, College Park. Research Associate (2002-2003). Lead Scientist of DARPA funded Human Identification (HID) and Human Activity Inference (HAI) projects.

HRL Laboratories (formerly Hughes Research Labs). Summer Research Intern (2000).

NEC Research Institute. Summer Research Intern (1999).

Motorola India Electronics Ltd. Software Development Engineer (1997-1998).

Consulting and Patents

Euclid Discoveries – Chief Consulting Scientist

Publications

- B. Song, O. Bursalioglu, E. Tuncel, A. Roy-Chowdhury, "Towards A Multi-Terminal Video Compression Algorithm Using Epipolar Geometry", IEEE Intl. Conf. on Acoustics, Speech and Signal Processing, 2006.
- A. Veeraraghavan, A Roy-Chowdhury and R. Chellappa, "The Function Space of An Activity", *IEEE Intl. Conf. on Computer Vision*, 2006. (Accepted)
- Y. Xu and A. Roy-Chowdhury. "Integrating the Effects of Motion, Illumination and Structure in Video Sequences", *IEEE Intl. Conf. on Computer Vision, 2005*.
- A. Roy-Chowdhury, "A Measure of Deformability of Shapes, With Applications to Human Motion Analysis," *IEEE Conf. on Computer Vision and Pattern Recognition*, 2005.
- R. Chellappa, A. Roy-Chowdhury, S. Zhou. "Recognition of Humans and Their Activities Using Video", Synthesis Lectures on Video and Multimedia Processing, Morgan and Claypool Publishers, 2005.
- A. Roy-Chowdhury, R. Chellappa, H. Gupta. "3D Face Modeling From Monocular Video Sequences", Face Processing: Advanced Modeling and Methods (Eds. R.Chellappa and W.Zhao), Academic Press, 2005.

- A. Veeraraghvan, A. Roy-Chowdhury and R. Chellappa, "Matching Shape Sequences in Video, with Application in Human Movement Analysis," *IEEE Trans. on Pattern Analysis and Machine Intelligence*, December 2005.
- A. Kale, A. N. Rajagopalan, A. Sunderesan, N. Cuntoor, A. Roy-Chowdhury, V. Krueger and R. Chellappa, "Identification of Humans Using Gait," *IEEE Trans. on Image Processing*, pp. 1163-1173, Sept. 2004.
- A. Roy-Chowdhury and R. Chellappa, "Face Reconstruction From Video Using Uncertainty Analysis and A Generic Model," *Computer Vision and Image Understanding*, Vol. 91, Nos. 1-2, pp. 188-213, July-August 2003. A patent application has been filed based on this work, Application No. 60/644817.
- N. Vaswani, A. Roy-Chowdhury and R. Chellappa, "Shape Activities: A Continuous State HMM for Moving/Deforming Shapes with Application to Abnormal Activity Detection", *IEEE Trans. on Image Processing,* pp. 1603-1616*,* October, 2005.
- A. Roy-Chowdhury and R. Chellappa, "Statistical Bias in 3D Reconstruction From A Monocular Video", *IEEE Trans. on Image Processing,* pp. 1057-1062, August, 2005.
- A. Roy-Chowdhury and R. Chellappa, "An Information Theoretic Criterion for Evaluating the Quality of 3D Reconstructions," *IEEE Transactions on Image Processing*, pp. 960-973, July 2004.
- A. Roy-Chowdhury and R. Chellappa, "Stochastic Approximation and Rate Distortion Analysis for Robust Structure and Motion Estimation," *International Journal of Computer Vision*, Vol. 55, No. 1, pp. 27-53, October, 2003.

Professional Societies
Member, IEEE

Honors and awards
National Talent Scholarship, Govt. of India, 1991 – 1997
Govt. of India, Graduate Fellowship, 1995 – 1997
Graduate Student Award, Dept. of Electrical and Computer Eng., University of Maryland, College Park, 2002
Regents Faculty Fellowship Award, June 2004

Service
Reviewer of all the major journals in Computer Vision, Image Processing and Pattern Recognition. Member of Technical Program Committee of major conferences in these areas.

Worked with National Geographic on an article titled "About Face"which appeared in the November 2003 issue (pp 18-19).

Professional Development
Attended major international conferences in Computer Vision (CVPR, ICCV), Image Processing (ICIP) and Signal Proecessing (ICASSP).

Xiang-Dong Tan
Assistant Professor

Degrees

Ph.D., Electrical & Computer Engineering, University of Iowa, 1999
M.S., Electrical Engineering, Fudan University, 1995
B.S., Electrical Engineering, Fudan University, 1992

University of California, Riverside, Service

Assistant Professor, III (OS), 7/1/2002
Assistant Professor, IV (OS), 7/1/2004

Other Professional Experience

Member of Technical Staffs, Altera Corporation, San Jose, CA. 01/01 – 007/02.
Member of Technical Staffs, Monterey Design Systems, Sunnyvale, CA. 08/99 --01/01.
Visiting Research Assistant, University of Washington, Seattle, WA. 09/98 – 05/99.
Summer Intern, Avant! Corp. (now Synposys), Fremont, CA. 05/98 – 09/99.
Summer Intern, Rockwell Semiconductor Systems, Newport Beach, CA. 07/97 – 09/97.
Research Assistant, University of Iowa, IA. 09/96 – 09/98.
Member of Faculty, Fudan University, Shanghai, China. 07/95 – 08/96.

Consulting and Patents

Consultant for Cadence Design Systems, Inc. San Jose, CA. Aug. 2003 to Aug. 2004

Sheldon X.-D. Tan, X. Wang, B.A. Fairbanks, "A Group-based Initial I/O Pin Placement Algorithm For Programmable Logic Devices with Multiple I/O Standards and Advanced I/O Features" Filed on May, 2003. U.S. Patent No. or International Patent No: 30681-2004400 *(Altera A850/A851 (30681-2004400))*

Publications

J1. S. X.-D. Tan, "A general hierarchical circuit modeling and simulation algorithm", *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 24, no. 3, pp. 418-434, March 2005.

J2. X.-D. S. Tan, W. Guo and Z. Qi, ""Hierarchical approach to exact symbolic analysis of large analog circuits", *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol. 24, no. 8, pp. 1241-1250, 2005.

J3. Z. Qi,, H. Yu, P. Liu, S. X.-D. Tan, L. He, "Wideband passive multi-port model order reduction and realization of RLCM circuits", *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems,* (TCAD) (in press).

See http://www.ee.ucr.edu/~stan/publication_list.html for complete publication list.

Professional Societies

Senior Member, the Institute of Electrical and Electronics Engineers
Member, ACM Special Interest Group on Design Automation (SIGDA).

Honors and awards

Best Student Award, Fudan University, 1991
Best Graduate Student Award, 1992
GuangHua Fellowship, Fudan University, 1994
First Place Poster Award (Ph.D dissertation), The Annual Conference of Center for Design of Analog and Digital Integrated Circuits (CDADIC), Seattle, WA, 1999
Best Paper Award, 36th IEEE/ACM Design Automation Congerence, New Orleans, LA, 1999
Regents Faculty Fellowship Award, June 2004
NSF Career Award, 2005
SIA Stay Tech award of $20,000 to improve student retention in years 1 and 2, 2005
Best Paper Award Nomination, 42th IEEE/ACM Design Automation Conf., Anaheim, CA 2005

Service

UCR EE Faculty Search Committee, member (July 2002 to July 2003)
UCR EE Faculty Search Committee, member (July 2003 to July 2004)
UCR EE Faculty Search Committee, member, (July 2004 to July 2005)
UCR EE Computing Committee, Chair, (April 2005 to present)
UCR International Education Committee, member, (April 2005 to July 2006)
Cooperating Faculty Member, Department of Computer Science and Engineering, (July 2003 to present)
EE ABET Accreditation Committee, member, (April 2006 to present).

Professional Development

In the past four years, Dr. Tan have built a successful, recognized VLSI design automation program in the Department of Electrical Engineering at UC Riverside. I was the first faculty member in the EE department to work on the computer engineering area with an emphasis on computer-aided design (CAD) of VLSI circuits. I established the **Mixed-Signal Nanometer VLSI Research Lab (MSLAB)** (http://www.mscad.ee.ucr.edu/), which now consists of 5 Ph.D. graduate students and 5 undergraduate students.

In the past four year, Dr. Tan have obtained many research funding for supporting his research. Total funding is **700K dollars** including the prestigious **NSF Faculty Early Career Development (CAREER) Award**. His research was also funded by two **UC Micro Program awards** via Cadence Design Systems, which shows a strong endorsement of my research efforts from industry.

Dr. Tan's research group has been publishing fruitfully in high-quality CAD-related international conferences and journals. He have published **76** conference and journal papers in my career as now, among them are **20** journal papers and **56** conference papers. Publications in some prestigious conferences, such as ICCAD, DAC, ASPDAC, indicate high quality research works due to these conferences' very competitive acceptance rates (about 20%-30%).

Erten Tuncel
Assistant Professor

Degrees

Ph.D., Electrical and Computer Engineering, UCSB, 2002
M.S., Electrical Engineering, Bilkent University, 1997
B.S., Electrical & Electronics Eng., Middle East Technical University, 1995

University of California, Riverside, Service

Assistant Professor, II (OS), 7/1/2003
Assistant Professor, III (OS), 7/1/2005

Other Professional Experience

January 1998-June 2003: University of California, Santa Barbara. Postgraduate Researcher, Department of Electrical and Computer Engineering (January-June 2003). Conducted research on distributed source coding and applications, multi-terminal rate-distortion theory, zero-error information theory, approximate similarity search in multimedia databases, and classification and pattern recognition. Graduate Student Researcher (June 1998-December 2002).

Summer 2000. Microsoft Corp., Digital Media Division, Santa Barbara, CA. Intern.

Consulting and Patents

Levent Onural, A. Aydin Alatan, and Ertem Tuncel, "Rule-based Moving Object Segmentation," Patent No: 6,337,917. Issued: January 8, 2002.

Publications

H. Ferhatosmanoglu, E. Tuncel, D. Agrawal, and A. El Abbadi, "High Dimensional Nearest Neighbor Searching," to appear in Elsevier Information Systems Journal.
E. Tuncel, "Slepian-Wolf Coding over Broadcast Channels," IEEE Transactions on Information Theory, pp. 1469-1482, April 2006.
E. Tuncel, J. Nayak, and K. Rose, "On Hierarchical Type-Covering," IEEE Transactions on Information Theory, pp. 4405-4417, December 2005.
E. Tuncel, "On Error Exponents in Hypothesis Testing," IEEE Transactions on Information Theory, pp. 2945-2950, August 2005.
E. Tuncel, P. Koulgi, and K. Rose, "Rate-Distortion Approach to Databases: Storage and Content-based Retrieval," IEEE Transactions on Information Theory, pp. 953-967, June 2004.
P. Koulgi, E. Tuncel, S. Regunathan, and K. Rose, "On Zero-error Coding of Correlated Sources," IEEE Transactions on Information Theory, pp. 2856-2873, November 2003.
E. Tuncel and K. Rose, "Additive Successive Refinement," IEEE Transactions on Information Theory, pp. 1983-1991, August 2003.

E. Tuncel and K. Rose, "Computation and Analysis of the N-layer Scalable Rate-Distortion Function," IEEE Transactions on Information Theory, pp. 1218-1230, May 2003.
E. Tuncel and K. Rose, "Error Exponents in Scalable Source Coding," IEEE Transactions on Information Theory, pp. 289-296, January 2003.
P. Koulgi, E. Tuncel, S. Regunathan, and K. Rose, "On Zero-error Source Coding with Decoder Side Information," IEEE Transactions on Information Theory, pp. 99-111, January 2003.

Professional Societies

Institute of Electrical and Electronics Engineers (IEEE)
IEEE Information Theory Society

Honors and awards

Ranked 97th in the nation among over a million students in Turkish National University entrance examinations
Undergraduate fellowship from H.O. Sabanci Foundation (VAKSA), 1992 – 1995
Ranked 3rd in the university and 2nd in the dept. of Electrical and Electronics Eng., Middle East Technical University, Class of 1995
Graduate fellowship from Bilkent University, 1995 – 1997
Graduate fellowship from University of California, Santa Barbara, 1997 – 2002
Regents Faculty Fellowship/Faculty Development Award, 9/2005

Service

Reviewed papers submitted to IEEE Transactions on Information Theory, IEEE Transactions on Pattern Analysis and Machine Intelligence, IEEE Transactions on Communications, IEEE Transactions on Automatic Control and IEEE International Symposium on Information Theory.

Technical Program Committee member for IEEE International Conference on Communications, Seoul, South Korea, 2005.

Designed a new graduate course on mathematical fundamentals of data compression.

Organizing committee member of National Puzzles & Games Contest, Turkey, 1996. Actively took part in the preparation of the puzzles and games.

Professional Development

PI of a recent NSF award: Urban Disaster Management Lab consisting of imaging/non-imaging sensor network.
Reviewer of major IEEE journals: Trans. on Information Theory, Trans. on Pattern Analysis and Machine Intelligence, Trans. on Communications, and Trans. on Automatic Control
Technical Program Committee member for IEEE International Conference on Communications, Seoul, South Korea, 2005.

Zhengyuan Xu
Associate Professor

Degrees

Ph.D., Electrical Engineering, Stevens Institute of Technology, 1999
M.S., Electrical Engineering, Tsinghua University, Beijing, China, 1991
B.S., Electronic Engineering, Tsinghua University, Beijing, China, 1989

University of California, Riverside, Service

Assistant Professor, II, 7/1/1999
Assistant Professor, III, 7/1/2001
Assistant Professor, IV, 7/1/2003
Associate Professor, II, 7/1/2005

Other Professional Experience

System Engineer, Tsinghua Unisplendour Corp., Tsinghua University, China, 8/1991 – 7/1996

Consulting and Patents

None.

Registrations

N/A

Publications

Principal publications of last five years

1. Z. Xu and B. M. Sadler, "Multiuser transmitted reference ultra wideband communication systems," *IEEE Journal on Selected Areas in Communications: Special Issue on Ultra Wideband Wireless Communications - Theory and Applications*, vol. 24, no. 4, Part 1, pp. 766-772, April 2006.
2. P. Liu and Z. Xu, "POR-based channel estimation for UWB communications," *IEEE Trans. on Wireless Communications*, vol. 4, no. 6, pp. 2968-2982, November 2005.
3. Z. Xu, P. Liu and J. Tang, "A subspace approach to blind multiuser detection for ultra-wideband communication systems," *EURASIP Journal on Applied Signal Processing: Special Issue on UWB - State of the Art*, vol. 2005, no. 3, pp. 413-425, March 2005.
4. Z. Xu, "Effects of imperfect blind channel estimation on performance of linear CDMA receivers," *IEEE Trans. on Signal Processing*, vol. 52, no. 10, pp. 2873-2884, October 2004.
5. Z. Xu and X. Wang, "Large-sample performance of blind and group-blind multiuser detectors: a perturbation perspective," *IEEE Trans. on Information Theory*, vol. 50, no. 10, pp. 2389-2401, October 2004.

6. Z. Xu, P. Liu and X. Wang, "Blind multiuser detection: from MOE to subspace methods," *IEEE Trans. on Signal Processing*, vol. 52, no. 2, pp. 510-524, February 2004.
7. Z. Xu, P. Liu and M. Zoltowski, "Diversity assisted channel estimation and multiuser detection for downlink CDMA with long spreading codes," *IEEE Trans. on Signal Processing*, vol. 52, no. 1, pp. 190-201, January 2004.
8. Z. Xu, "On the second-order statistics of the weighted sample covariance matrix," *IEEE Trans. on Signal Processing*, vol. 51, no. 2, pp. 527-534, February 2003.
9. Z. Xu, "Perturbation analysis for subspace decomposition with applications in subspace-based algorithms," *IEEE Trans. on Signal Processing*, vol. 50, no. 11, pp. 2820-2830, November 2002.
10. Z. Xu, "Asymptotic performance of subspace methods for synchronous multirate CDMA systems," *IEEE Trans. on Signal Processing*, vol. 50, no. 8, pp. 2015-2026, August 2002.
11. Z. Xu, "Low complexity multiuser channel estimation with aperiodic spreading codes," *IEEE Trans. on Signal Processing*, vol. 49, no. 11, pp. 2813-2822, November 2001.

Professional Societies

IEEE senior member
Elected member of the IEEE Signal Processing for Communications Technical Committee

Honors and Awards

Tsinghua Scholarship sponsored by Motorola Inc., 1991
Outstanding Student Fellowship - Tsinghua University, 1984 – 1989
Peskin Award, Stevens Institute of Technology, NJ, 1999
Regents' Faculty Fellowship/Faculty Development Award, UCR, 2001, 2003, 2005
Academic Senate Research Award, UCR, 2001 – 2006

Service

Associate Editor for IEEE Communications Letters and IEEE Trans. on Vehicular Technology
Technical Program Committee Member and Session Chair for various international conferences
Member of EE Graduate Committee, College of Engineering Executive Committee, UCR

Professional Development

Professional development activities in the last five years

Invited talks in several conferences
Developed courses for the EE graduate program