

PARASTOO SADEGHI

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- EDUCATION
- ◇ **PhD in Electrical Engineering**, The University of New South Wales (UNSW), Sydney, Australia, 2006
 - ◇ **ME Honours in Electrical Engineering**, Sharif University of Technology (SUT), Tehran, Iran, 1997
 - ◇ **BE in Electrical Engineering**, Sharif University of Technology, Tehran, Iran, First-Class Honours, 1995

- HIGHLIGHTS
- ◇ **Fellow (Senior Lecturer)**, CECS, ANU, Jan. 2009-Present
 - ◇ **Chief Investigator**, Australian Research Council (ARC) Discovery Project, “*Signal Concentration, Robust Signal Processing and Information Theory on the Unit Sphere*”, 2010-2012, (success rate $\approx 20\%$)
 - ◇ **Chief Investigator**, Australian Research Council (ARC) Linkage Project, “*Advancing Medical Image Analysis through High Performance Heterogeneous Computing, Numerical Simulation, and Novel Human Computer Interfaces*”, 2010-2012, (success rate $\approx 40\%$)
 - ◇ **Principal Chief Investigator**, Australian Research Council (ARC) Discovery Project, “*Reliable Communication in Wireless Cooperative Networks under Channel Uncertainty*”, 2009-2011, (success rate $\approx 20\%$)
 - ◇ **Chief Investigator**, Australian Research Council (ARC) Discovery Project, “*Model-Based Approach to Adaptive Channel Coding and Estimation for Future Wireless Communication Systems*”, 2007-2009, (success rate $\approx 20\%$)
 - ◇ **15 Journal and Technical Magazine Articles, 46 Conference Papers (published or in print)**
 - ◇ **One US patent application**, “Feedback-based online network coding,” Application Number 12/474,738, 29 May 2009.
 - ◇ **2 IEEE Region 10 Paper Awards**, 2003 and 2005
 - ◇ **Top PhD Supervisor Award**, ANU, 2010
 - ◇ **Primary Supervision**, 2 Postdoctoral Research Fellows, 4 ANU PhD students, 1 Mphil student, 2 Masters students, 1 Honours student, 1 summer scholar, 2008-present
 - ◇ **Co-supervision**, 2 Postdoctoral Research Fellows, 4 ANU PhD students, 1 Masters Honours student, 2009-present
 - ◇ **Supervision/Co-supervision**, 3 PhD student visitors, 2 ANU PhD students (Informal), 2005-present
 - ◇ **Lecturing**, Faculty of Engineering and Information Technology (FEIT) and CECS, ANU, 2006-2010

- ◇ **Guest Lecturing**, School of Electrical Engineering and Telecommunications, UNSW, 2004
- ◇ **Second-Ranking Student** in the Mathematical and Technical Sciences Category of the Nationwide University Admission Test (Concour), Iran, 200,000 applicants, 1991
- ◇ **Industry Experience**, Research Engineer, Senior Research Engineer, Team Leader, Research and Development Sector, 1996-2001

RESEARCH INTERESTS

Information Theory, Wireless Communication Theory, Network Coding, Wireless Cooperative/Relay Networks, Applications of Information Theory and Signal Processing in Medical Image Analysis, Information Capacity of Fading Channels, Intrinsic Limits of Dimensionality and Richness in Multiple-Antenna Wireless Communication Systems, Signal Processing on the Unit Sphere

POSITIONS

- ◇ **Jan 2009 - Present:** Fellow (Senior Lecturer), CECS, ANU
- ◇ **Aug 2005 - Dec 2008:** Research Fellow, Department of Information Engineering, RISE, ANU
- ◇ **Mar 2002 - Jun 2005:** PhD Scholar, School of Electrical Engineering and Telecommunications, UNSW
- ◇ **May 2001 - Dec 2001:** Senior Research Engineer, Deqx Pty. Ltd. (formerly known as Clarity Eq), Sydney, Australia
- ◇ **May 2000 - May 2001:** Research Engineer, Deqx Pty. Ltd. (formerly known as Clarity Eq), Sydney, Australia
- ◇ **Sep 1998 - Mar 2000:** Senior Research Engineer/Team Leader, Iran Communications Industries (ICI), Tehran, Iran
- ◇ **Sep 1997 - Sep 1998:** Research Engineer, Iran Communications Industries (ICI), Tehran, Iran
- ◇ **Jan 1996 - Sep 1997:** (Part-time) Research Engineer, Iran Telecommunications Research Centre (ITRC), Tehran, Iran

AWARDS, GRANTS, SCHOLARSHIPS

- ◇ **Top PhD Supervisor Award**, ANU, Nov. 2010
- ◇ **Australian Research Council (ARC) Discovery Project**, Australian Research Council (ARC) Discovery Project, with Professor R. A. Kennedy, \$240,000, "*Signal Concentration, Robust Signal Processing and Information Theory on the Unit Sphere*", 2010-2012
- ◇ **Australian Research Council (ARC) Linkage Project**, Australian Research Council (ARC) Linkage Project, with Professor R. A. Kennedy, Dr. R. Shams, Associate Professor A. Rendell, and Associate Professor H. Gardner, \$805,000 + Microsoft contributions, "*Advancing Medical Image Analysis through High Performance Heterogeneous Computing, Numerical Simulation, and Novel Human Computer Interfaces*", 2010-2012
- ◇ **Australian Research Council (ARC) Discovery Project**, \$240,000, with Prof. Lapidoth (as an International Partner Investigator), "*Reliable Communication in Wireless Cooperative Networks under Channel Uncertainty*", 2009-2011
- ◇ **Australian Research Council (ARC) Discovery Project**, \$315,000, with Professor R. A. Kennedy and Professor P. Rapajic (International Partner Investigator), "*Model-Based Approach to Adaptive Channel Coding and Estimation for Future Wireless Communication Systems*", 2007-2009
- ◇ **IEEE Region 10 Postgraduate Student Paper Award**, Third Prize, "*On the Achievable Information Rate in Finite State Markov Modeling of Flat Fading Channels*", 2005

- ◇ **IEEE Region 10 Postgraduate Student Paper Award**, Second Prize, “*A Novel Method for Receiver Training in Flat Fading Channels Modeled as Finite State Markov Processes*”, 2003
 - ◇ **Second-Ranking Student** in the Mathematical and Technical Sciences Category of the Nationwide University Admission Test (Concour), Iran, 200,000 applicants, 1991
 - ◇ **Travel Grants**, UNSW + ARC, \approx \$14000, 2002-2005
 - ◇ **Travel Grants**, CECS, ANU, \approx \$40000, 2006-2011
 - ◇ **Vice Chancellor’s Grant**, ANU, \$10000, 2008
 - ◇ **Travel Grant**, ARC Communications Research Network (ACoRN), \$4500, 2006
- TEACHING
- ◇ **Lecturer and Course Coordinator**, CECS, ANU, “*Mobile and Wireless Communications*”, Undergraduate/Postgraduate Course, Semester 2, 2008 and 2010
 - ◇ **Lecturer**, Faculty of Engineering and Information Technology (FEIT), ANU, “*Mobile and Wireless Communications*”, Undergraduate/Postgraduate Course, Semester 2, 2006
- POSTDOCS
- ◇ **Primary supervision**, Dr. Tharaka Lamahewa, CECS, ANU, Adaptive Channel Coding and Estimation, Aug. 2007-2010
 - ◇ **Primary supervision**, Dr. Charlotte Hucher, CECS, ANU, Cooperative Networks, Aug. 2009-Present
 - ◇ **Co-supervision**, Dr. Tharaka Lamahewa, CECS, ANU, Signal Processing on the Unit Sphere, Jan. 2011-Present
 - ◇ **Co-supervision**, Dr. Brad Treeby, CECS, ANU, Ultrasound Simulation with Applications to Medical Imaging, Nov. 2011-Present
- PHD STUDENTS
- ◇ **Primary supervision**, Sean Zhou, CECS, ANU, Adaptive Channel Coding and Estimation, Jan. 2008-2010, Graduated in Sep. 2010
 - ◇ **Primary supervision**, Amy Fu, CECS, ANU, Network Coding, Feb. 2010-Present
 - ◇ **Primary supervision**, Shahriar Etemadi Tajbakhsh, CECS, ANU, Network Coding, Mar. 2010-Present
 - ◇ **Primary supervision**, Shama Islam, CECS, ANU, Cooperative Communications, Mar. 2011-Present
 - ◇ **Co-supervision**, Daniel Chae, CECS, ANU, Compressed Sensing, Apr. 2009-Present
 - ◇ **Co-supervision**, Zubair Khalid, CECS, ANU, Signal Processing on the Unit Sphere, Apr. 2010-Present
 - ◇ **Co-supervision**, Mohammad Najafi, CECS, ANU, Medical Image Analysis, Mar. 2011-Present
 - ◇ **Co-supervision**, Mohammad Esmail Zadeh, CECS, ANU, Medical Image Analysis, Mar. 2011-Present
 - ◇ **Supervision**, Foroogh Tabataba, Visitor from Sharif University (July 2008-Dec. 2008), Cooperative Communications, Jul. 2008-Present
 - ◇ **Supervision**, Mohammadali Mohammadi, Visitor from KNT University, Tehran, Iran, Cooperative Communications, Nov. 2010-Present
 - ◇ **Supervision**, Zahra Mobini, Visitor from KNT University, Tehran, Iran, Cooperative Communications, Nov. 2010-Present
 - ◇ **(Informal) Co-supervision**, Rauf Iqbal, CECS, ANU, Information Theory of Wireless Communication Channels, Nov. 2005-2008

- ◇ **(Informal) Co-supervision**, Ramtin Shams, CECS, ANU, Computer Vision and Medical Image Analysis, Jan. 2007-2010

- OTHER STUDENTS
 - ◇ **Primary supervision (Mphil)**, Ming (Fisher) Yu, CECS, ANU, Signal Processing for DVB-T2, Jan. 2010-Present
 - ◇ **Supervision (ME)**, Justin Ruffell, CECS, ANU, Information Transfer in Natural Neuronal Systems, Feb. 2007-June 2007
 - ◇ **Supervision (ME)**, Yang Liu, CECS, ANU, Channel Estimation in Wireless Fading Channels, Feb. 2007-June 2007
 - ◇ **Co-supervision (ME Honours)**, Shilpi Saini, CECS, ANU, Modelling of Relay Channels, Jul. 2008-Feb. 2009
 - ◇ **Supervision (BE Honours)**, Nathan Smith, CECS, ANU, Channel Estimation for Relay Networks, Feb. 2009-Sep. 2009
 - ◇ **Supervision (Summer Scholar)**, Amy Fu, Visiting from University of Sydney, Channel Estimation, Nov. 2008-Feb. 2009

- SELECTED TALKS AND SEMINARS
 - ◇ **Invited Talk**, *“Towards a Low-complexity Dynamic Decode and Forward (DDF) Relaying Protocol”*, AusCTW, Melbourne, Australia, Jan. 2011
 - ◇ **Plenary Talk**, *“Towards a Low-complexity Dynamic Decode and Forward (DDF) Relaying Protocol”*, ICSPCS, Goldcoast, Australia, Dec. 2010
 - ◇ **Invited Talk**, *“On Coding for Cooperative Data Exchange”*, Information Theory and Coding Workshop, Sharif University, Tehran, Jun. 2010
 - ◇ **Guest Lecturer**, *“Delay Minimization in Network Coding”*, MIT, USA, May 2009.
 - ◇ **Invited Talk**, *“Introducing Periodic Feedback for Achieving Higher Information Rates in Fading Channels”*, Institute for Telecommunication Research (ITR), University of South Australia, Apr. 2008
 - ◇ **Seminar**, *“An Information Theoretic Viewpoint to Optimal Modelling of Communication Channels with Memory”*, TUM, Munich, Apr. 2008
 - ◇ **Seminar**, *“An Information Theoretic Viewpoint to Optimal Modelling of Communication Channels with Memory”*, University of Cergy Pontoise, Paris, Oct. 2007
 - ◇ **Seminar**, *“Intrinsic Finite Dimensionality and Richness of Random Multipath Fields with applications to MIMO systems”*, ETH, Zurich, Switzerland, June 2006
 - ◇ **Seminar**, *“The effect of memory order on the information capacity of finite-state Markov channels and its implications for the capacity analysis of time-varying fading channels”*, ETH, Zurich, Switzerland, June 2006

- VISITS
 - ◇ **Prof. Nasiri**, Sharif University, Tehran, Jun. 2010
 - ◇ **Professor Loeliger and Professor Lapidoth**, ETH, Zurich, Switzerland, June 2009
 - ◇ **Assistant Prof. Alex Sprintson**, Texas A&M University, USA, April 2009
 - ◇ **Prof. Muriel Medard**, MIT, USA, Feb.-May 2009
 - ◇ **Prof. Ralf Koetter**, TUM Munich, Germany, April-June 2008
 - ◇ **Professor Grant and Dr. McDonnell**, Institute for Telecommunication Research (ITR), University of South Australia, Apr. 2008
 - ◇ **Prof. Nasiri**, Sharif University, Tehran, Oct. 2007
 - ◇ **Prof. Fijlakov**, University of Cergy Pontoise, Paris, Oct. 2007

- ◇ **Dr. Vontobel**, HP Labs, Palo Alto, July 2006
- ◇ **Professor Loeliger and Professor Lapidath**, ETH, Zurich, Switzerland, June 2006
- ◇ **Professor Rapajic**, School of Engineering, University of Greenwich, June 2006
- ◇ **Professor Rasmussen and Dr. Hong** Institute for Telecommunication Research (ITR), University of South Australia, Mar. 2005

MEMBERSHIP ◇ **Senior Member**, IEEE, Oct. 2007-Present

- ◇ **Member**, IEEE, 2006- Oct. 2007
- ◇ **Student Member**, IEEE, 2002-2006
- ◇ **Member**, IEEE Communications Society, 2002-Present
- ◇ **Member**, IEEE Information Theory Society, 2005-Present
- ◇ **Member**, Australian Communication Research Network, ACoRN, 2004-Present

SELECTED SERVICE

- ◇ **Technical Program Committee Memeber**, International Symposium on Information Theory (ISIT), 2011
- ◇ **Technical Program Committee Chair**, Australian Communication Theory Workshop (AusCTW), Canberra, Australia, Feb. 2010
- ◇ **Technical Program Committee Member and Publications Editor**, Australian Communication Theory Workshop (AusCTW), Sydney, Australia, Feb. 2009
- ◇ **International Program Committee Member**, IASTED International Conference on Signal Processing, Pattern Recognition and Applications (SPPRA 2009), Feb. 2009
- ◇ **Technical Program Committee Member and Publications Editor**, Australian Communication Theory Workshop (AusCTW), Auckland, New Zealand, Feb. 2008
- ◇ **Technical Program Committee Member**, IEEE International Symposium on Spread Spectrum and its Applications (ISSSTA), Sydney, Australia, Sep 2004
- ◇ **Seminar Coordinator**, Department of Information Engineering, ANU, Feb. 2007-Apr. 2008
- ◇ **HDR students College Advisor**, College of Engineering and Computer Science, ANU, Nov. 2006-2010
- ◇ **Member of the Affirmative Action Group**, College of Engineering and Computer Science, ANU, October 2006-2010
- ◇ **Member of the Selection Committee Panels**, College of Engineering and Computer Science, ANU, July 2007-Present
- ◇ **Member of the Academic Women's Steering Committee**, ANU-wide committee (invited by the Pro-VC). Feb. 2008-Sept. 2008
- ◇ **Excellence Research Ausralia Panel 10 Chair**, ANU-Wide, March 2010-July 2010
- ◇ **Memeber of IAS Working Group**, CECS, ANU, March 2010-September 2010
- ◇ **CECS representative for Bachelor of Engineering Accreditation**, CECS, ANU, 2010.
- ◇ **Reviewer**, IEEE Transactions on Signal Processing
- ◇ **Reviewer**, IEEE Transactions on Information Theory
- ◇ **Reviewer**, IEEE Transactions on Communications
- ◇ **Reviewer**, IEEE Transactions on Wireless Communications

- ◇ **Reviewer**, IEEE Journal on Selected Areas in Communications
- ◇ **Reviewer**, EURASIP Journal on Wireless Communications and Networking
- ◇ **Reviewer**, European Transactions on Telecommunications (ETT)
- ◇ **Reviewer**, IEEE International Conference on Communications (ICC)
- ◇ **Reviewer**, IEEE International Symposium on Information Theory (ISIT)
- ◇ **Reviewer**, Australian Communication Theory Workshop (AusCTW)
- ◇ **Reviewer**, International Conference on Signal Processing and Communication Systems (ICSPCS)
- ◇ **Reviewer**, IEEE International Symposium on Spread Spectrum and its Applications (ISSSTA)