

## Costas N. Georghiades

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### General Research Interests

Statistical communication theory and information theory; multi-input, multi-output (MIMO) wireless systems; space-time coding; channel coding/decoding; cognitive radio; information-theoretic security. Application areas of interest: wireless communication systems (MIMO, 5G, etc.), optical communication systems, coding/decoding for data storage systems.

### Education

- 1983-1985: Washington University, D.Sc., Electrical Engineering
- 1981-1983: Washington University, M.Sc., Electrical Engineering
- 1975-1980: American University of Beirut, BE, Electrical Engineering (with distinction)

### Professional Employment

- 2016-present: Senior Associate Vice President for Research, Texas A&M University
- 2016-2018: Interim Co-Director, Texas A&M Energy Institute
- 2014-2016: Associate Agency Director, Texas A&M Engineering Experiment Station (TEES)
- 2013-2014: Assistant Agency Director, TEES
- 2012-2016: Associate Dean for Research, College of Engineering, Texas A&M University
- 2005-2012: Department Head of Electrical and Computer Engineering, Texas A&M University
- 2002-present: Holder of the Delbert A. Whitaker Endowed Chair
- 1997-2005: Group Leader, Telecommunications and Signal Processing Group
- 1997-2002: J.W. Runyon Jr. Professor, College of Engineering, Texas A&M University
- 1996-1999: Co-Director, *VLSI-Telecommunications Research Center*
- 1995-present: Professor, Electrical and Computer Engineering Department, Texas A&M University
- 1991-1995: Associate Professor, Electrical Engineering Department, Texas A&M University
- 1985-1991: Assistant Professor, Electrical Engineering Department, Texas A&M University
- Summer 1985: Instructor, Electrical Engineering Department, Washington University
- Summer 1984: Instructor, Electrical Engineering Department, Washington University
- 1981-1985: Research Assistant, Electrical Engineering Department, Washington University
- 1980-1981: Field Engineer, Compagnie Generale de Radiologie (CGR), Beirut, Lebanon
- Summer 1980: Instructor, Electrical Engineering Department, the American University of Beirut

### Affiliations

- Life Fellow of the IEEE (Fellow since 1998)
- Member of Electrical and Computer Engineering Department Head Association (ECEDHA)
- Member, IEEE Communications Society
- Member, IEEE Information Theory Society
- Member, IEEE Communication Theory Technical Committee. Committee Chair in 2004-2006.

### Honors and Awards

- Texas A&M College of Engineering Excellence Award -Service, 2020-21
- IEEE Communication Theory Technical Committee (CTTC) Service Award, 2012; "For sustained contributions as editor, conference program chair, and CTTC chair."
- Delbert A. Whitaker Endowed Chair Professor, 2002- present
- E.D. Brockett Professor, 2002-2003
- Clear Lake Council of Technical Societies Educator of the Year Award, 2000
- Fellow of the IEEE, 1998 (*For contributions to the theory of optimum receiver design*)
- J.W. Runyon, Jr., Endowed Professorship, 1997-2002
- Halliburton Professor, Texas A&M University, 1995

## Professional Service

### Editorial Positions

- Editor-in-Chief, *IEEE Communication Letters*, December 2005-December 2008.
- Guest Editor, *EURASIP Journal on Wireless Communications and Networking*, Special Issue on *Advanced Signal Processing Algorithms for Wireless Communications*, 2004-2005.
- Associate Editor, *IEEE Communication Letters*, 1997-2000
- Associate Editor, *IEEE Transactions on Information Theory*, 1994-1997
- Guest Editor, *IEEE Journal on Selected Areas in Communications (J-SAC)*, 1995
- Associate Editor, *IEEE Transactions on Communications*, 1987-1995
- Publications Editor, *IEEE Transactions on Information Theory*, 1989-1992

### Significant Professional Committee Membership

- Member, IEEE Fellows Committee, 2021-
- Member, IEEE Eric E. Sumner Award Committee, 2020-
- Member, Awards Committee, Communication Theory Technical Committee, 2019-2020
- Member, Nominations and Election Committee, Communication Theory Technical Committee, 2019
- Member, Nominations and Election Committee, Communication Theory Technical Committee, 2016
- Member, IEEE Wireless Communications Letters Steering Committee, January 2012-2016
- Chair, IEEE Wireless Communications Letters Steering Committee, January 2012-January 2014
- Member, IEEE Communication Society Awards Committee, 2012-2014
- Member, Communication Theory Technical Committee Chair Selection Committee, 2012
- Member, IEEE Richard W. Hamming Medal Committee, 2011-2014
- Chair, Communication Theory Technical Committee Chair Selection Committee, 2010
- Chair, Communication Theory Workshop Venue Selection Committee, 2009-2011
- Member, IEEE Communications Society Conferences and Meetings Board, 2006-2007
- Chair, IEEE Communications Society Communications/Signal Processing Cluster, 2006
- Chair, IEEE Communication Theory Technical Committee (CTTC), 2004-2006
- Member, State Strategy on Advanced Technology (SSAT) Software/Wireless Technology Working Group (TWG), 2004-2005
- Member, State Strategy on Advanced Technology (SSAT) Development Team (State level committee charged with creating leading edge R&D programs for the State; by invitation); 2004-2005
- Chair, Joint Information Theory and Communication Societies' Best Paper Awards Committee, 2003
- Chair, Awards Committee for the Canadian Award in Telecommunications, 2002
- Chair, IEEE Information Theory Society Fellows Evaluation Committee, 2003-2006
- Member, IEEE Information Theory Society Fellows Evaluation Committee, 2002-2006
- Member, Joint IEEE Information Theory and Communication Societies' Best Paper Awards Committee, 2002
- Member, IEEE Communications Society Awards Committee, 2001-2004
- Chair, Texas Telecommunications Engineering Consortium (TxTEC) Vision committee, 2000-2002
- Member, Steering Committee, TxTEC, 1997-2008

### Conference Organization

#### Executive Committee Positions

- Co-organizer, IEEE Wireless Communications and Networking Conference (WCNC) 2016 Workshop on Optical Wireless Communications, Doha, Qatar, April 3-6, 2016
- Technical Program Chair, Communication Track, International Symposium on Communications, Control and Signal Processing (ISCCSP 2014), Athens, Greece, May 21-23, 2014
- Technical Program Co-Chair, International Symposium on Communications, Control and Signal Processing (ISCCSP 2010), Limassol, Cyprus
- General Co-Chair, International Symposium on Information Theory (ISIT), Austin, Texas, June 2010
- Chair, SPIE Fluctuations and Noise 2005 (FaN05) -Noise in Communication Systems Conference, Austin, Texas, May 2005

- Technical Program Chair, IEEE Communication Theory Workshop, Park City, Utah, June 2005
- General Chair, IEEE Information Theory Workshop 2004, San Antonio, Texas October 2004
- Co-Chair, SPIE Fluctuations and Noise 2004 (FaN04) -Noise in Communication Conference, Canary Islands, Spain, May 2004
- Chair, Fourth Texas Telecommunications Engineering Consortium (TxTEC) Conference, Texas A&M University, January 2002
- Chair, IEEE Communication Theory Symposium, San Antonio, Texas, November 2001
- Technical Program Chair, IEEE Communication Theory Workshop, Borrego Springs, CA, 2001
- Chair, Technical Program Committee, 1999 IEEE Vehicular Technology Conference, Houston, TX
- Chair, Technical Program Committee, IEEE Communication Theory Mini Conference (CTMC), Phoenix, Arizona, November 1997
- Communication Theory Technical Committee Representative to Globecom '93, Geneva, Switzerland
- Deputy-Chair, IEEE Communication Theory Mini Conference (CTMC), Houston, TX, 1993
- Local Arrangements Chair, International Symposium on Information Theory (ISIT), San Antonio, Texas, January 1993

### **Technical Program Committee Membership**

- 27th IEEE Symposium on Computers and Communications (ISCC), Greece, 2022
- Communication Theory Symposium within Globecom 2020, Taipei, Taiwan, December 2020
- Communication Theory Symposium within Globecom 2019, Big Island, Hawaii, December 2019
- 24<sup>th</sup> IEEE Symposium on Computers and Communications (ISCC), Barcelona, Spain, July 2019
- 26<sup>th</sup> International Conference on Telecommunications (ICT), Hanoi, Vietnam, April 2019
- Global Information Infrastructure and Networking Symposium (GIIS), Thessaloniki, Greece, 2018
- 23<sup>rd</sup> IEEE Symposium on Computers and Communications (ISCC), Natal, Brazil, June 2018
- Signal Processing for Communications Symposium within ICC 2018, Kansas City, USA, May 2018
- Communication Theory Symposium within Globecom, Singapore, December 2017
- 22<sup>nd</sup> IEEE Symposium on Computers and Communications (ISCC), Heraklion, Crete, July 2017
- 24<sup>th</sup> International Conference on Telecommunications (ICT), Limassol, Cyprus, May 2017
- Communication Theory Symposium within Globecom, Washington DC, December 2016
- Asia-Pacific Conference on Communications (APCC), Yogyakarta, Indonesia, August 2016
- 23<sup>rd</sup> International Conference on Telecommunications (ICT), Thessaloniki, Greece, May 2016
- Communication Theory Symposium within Globecom, San Diego, CA, December 2015
- Communication Theory Symposium within ICC, London, UK, June 2015
- 22<sup>nd</sup> International Conference on Telecommunication (ICT), Sydney, Australia, April 2015
- Communication Theory Symposium within Globecom, Austin, Texas, December 2014
- Communication Theory Symposium within ICC, Sydney, Australia, June 2014
- Communication Theory Symposium within Globecom, Atlanta, Georgia, December 2013
- Communication Theory Symposium within ICC, Budapest, Hungary, June 2013
- Communication Theory Symposium within Globecom, Anaheim, California, December 2012
- Communication Theory Symposium within ICC, Ottawa, Canada, June 2012
- International Program Committee, The Seventh IASTED International Conference on Communication, Internet, and Information Technology (CIIT), 2012
- Communication Theory Symposium within ICC, Kyoto, Japan, June 2011
- Second International Conference on Emerging Network Intelligence, Florence, Italy October 2010
- Communication Theory Symposium within ICC, Cape Town, South Africa, May 2010
- First International Conference on Emerging Network Intelligence, Sliema, Malta October, 2009
- Information Theory Workshop, Volos, Greece, June, 2009
- Communication Theory Symposium within ICC, Dresden, Germany, June, 2009
- Wireless Communication Symposium within Globecom, New Orleans, December 2008
- International Program Committee, IASTED International Conference on Communication, Internet and Information Technology (CIIT) 2007, Banff, Canada, July 2007

- IEEE Wireless Euro-Mediterranean International Conference (WEMIC), Amman, Jordan, March 2006
- IEEE International Communications Conference (ICC), Istanbul, Turkey, 2006
- International Program Committee for the IASTED International Conference on Communications, Internet and Information Technology, Cambridge, USA, October 2005
- International Communications Conference (ICC) Seoul, Korea, 2005
- International Conference on E-Business and Telecommunications Networks (ICETE), UK, 2005
- International Symposium on Information Theory and its Applications, Parma, Italy, October 2004
- International Program Committee, IASTED International Conference on Communications, Internet and Information Technology (CIIT), St. Thomas, Virgin Islands, USA, November 2004
- International Conference on E-Business and Telecommunications Network, Portugal August 2004
- IEEE Communication Theory Symposium within ICC, Paris, France, 2004
- IEEE Globecom, Dallas, Texas, 2004
- International Program Committee, IASTED International Conference on Communications, Internet and Information Technology, 2003
- International Program Committee, Conference on Wireless and Optical Communications (WOC), Banff, Canada, July 2003
- Conference on Wireless and Optical Communications (WOC), Banff, Canada, 2003,
- IEEE Vehicular Technology Conference (VTC), Vancouver, Canada, September 2002
- Sixth International Conference on Computer Science and Informatics (CS&I), NC, USA, March 2002
- Conference on Wireless and Optical Communications (WOC), Banff, Canada, 2002
- Conference on Wireless and Optical Communications (WOC), Banff, Canada, June 2001
- IEEE Vehicular Technology Conference, Rhodes, Greece, May 2001
- Fourth International Symposium on Wireless Personal Multimedia Communications (WPMC), Aalborg, Denmark, September 2001
- International Symposium on Information Theory and Its Applications, Mexico City, Mexico, November 1998
- Eighth IEEE International Conference on Personal, Indoor, and Mobile Radio Communications (PIMRC), Finland, September 1997
- The 5th IEEE Mediterranean Conference on Control and Systems, Paphos, Cyprus, July 1997
- IEEE International Symposium on Information Theory (ISIT), Ulm, Germany, 1997
- Seventh IEEE International Conference on Personal, Indoor, and Mobile Radio Communications (PIMRC), Taipei, Taiwan, ROC, October 1996

#### **Other Professional Service**

- Member, proposal evaluation committee of the Hellenic Foundation for Research and Innovation, 2018
- Member of review board for the promotion of a faculty at the Cyprus University of Technology, 2016-2017
- Member of the Advisory Board of FOSS Research Center for Sustainable Energy, University of Cyprus, 2014-2018
- Member of review panel to evaluate the Electrical and Computer Engineering Department at the National Technical University of Athens, Athens, Greece, October 2013
- Panelist, NIweek RF and Communication Research Track, August 2013
- Member of dissertation evaluation committee for Ioanna Ioannou, University of Cyprus, Nicosia, Cyprus (dissertation defense on January 15, 2013)
- Panelist, ARISTEIA Research Program, Greek National Council for Research and Technology, 2012-2013
- Panelist, NIweek RF and Communication Research Track, August 2012
- Member, Faculty Selection Committee, The University of Cyprus, 2011-2012
- Panelist, ARISTEIA Research Program, Greek National Council for Research and Technology, 2011-2012
- Reviewer of proposals for Science Foundation Ireland, 2011
- Session Leader, "The Role of Ubiquitous Mobile Computing in the Enterprise," IBM Symposium on Future of Systems, Austin, Texas September 23, 2011
- Member, Advisory Council, Cyprus University of Technology, 2009-2011
- Member, Faculty Electoral Board, Cyprus University of Technology, 2009-2011

- Member, NSF panel on Expeditions in Computing, April 2009
- Member of panel to evaluate a Science Foundation Ireland project, Dublin, Ireland, May 2008
- Member, NSF Panel for CAREER Awards, 1998, 2002, 2006, 2007
- External reviewer for faculty promotions, Kuwait University, 2006, 2007
- External Ph.D. dissertation reviewer for McGill University (Canada), the University of Sydney (Australia), and the University of Science and Technology (India)
- Member, NSF ITR Panel, 2001
- Member of review panel to evaluate the Electrical Engineering Department at the University of Utah, 2001

#### **Internal/Academic Service**

- Organizer of Texas A&M Institute for Advanced Studies (HIAS) symposium on *Information and Computation: Tools for Better Living*, February 24, 2017.
- Member, TAMU University Research Council (URC) Executive Committee, 2014-2016
- Chair, URC Working Group on Shared Research Infrastructure, 2014-2016
- Chair, Industrial and Systems Engineering Head Search Committee, 2011-2012
- Chair, Industrial and Systems Engineering Head Search Committee, 2010-2011
- Elected Member, College of Engineering, Engineering Endowed Chair Council (ECC) 2003-2010
- Department Head, ECE Department, Texas A&M University, September 2005-2012
- Member, Interdisciplinary Life Sciences Building (ILSB) Scientific Advisory Committee, 2006-2007
- Member (elected position), Electrical Engineering Awards Committee, 2004-2005
- Member, TI Analog Chair Search Committee, 2004-2005
- Chair, Endowed Professorship Search Committee, 2004
- Member, Electrical Engineering Hiring Committee, 2003-2005
- Member, College of Engineering Awards Committee, 2003, 2004
- Chair, Graduate Recruiting Subcommittee, Engineering Chair Council (ECC), appointed, 2003
- Member (elected position), Electrical Engineering Advisory Committee, 2003-2005
- Member, Electrical Engineering Distinguished Speaker Committee, 2003-2005
- Member, College of Engineering Tenure and Promotion Advisory Committee, 2002-2004
- Member, Analog Chair Search Committee, 2002-2003
- Chair (elected), Electrical Engineering Department Promotion and Tenure Committee, 2002-2004
- Member, Analog/VLSI Chair Professorship search committee, 2001
- Co-Chair, Telecommunications and Informatics Task Force (TITF) (University level), 2000-2003
- Member, Telecommunications and Informatics Task Force (TITF) (University level), 1999-2000
- Member, Faculty Development Leave Evaluation Committee, College of Engineering, 2000, 2003, 2004
- Member Energy Efficiency proposal evaluation committee (University level), 2000
- Member (elected position), Electrical Engineering Tenure and Promotions Committee, 1999-2001
- Member Energy efficiency proposal evaluation committee (University level), 1999
- Member, Jack Kilby Chair Professor search committee, 1998-1999
- Member, Webb Professorship search committee, 1998-1999
- Member, Strategic Planning Committee (elected), 1998-1999
- Member, Distinguished Speaker Committee, 1997-2000
- Member, Texas Telecommunications Engineering Consortium (TxTEC) Steering Committee, 1997-2001
- Group Leader, Telecommunication and Signal Processing Group, 1997-2005
- Member, Electrical Engineering Department Post Tenure Review Committee, 1996
- Chairman (elected), Distinguished Speaker Committee, Department of Electrical Engineering, 1989-1996
- Chairman (elected), Electrical Engineering Advisory Committee, 1996-1997
- Member (elected), Electrical Engineering Tenure and Promotions Committee, 1996-1997
- Member (elected), Awards Committee, Department of Electrical Engineering, 1992-1993, 1995-1996
- Member, Electrical Engineering Head Search Committee, 1996-1997
- Energy efficiency proposal evaluation committee (University level), 1994

## Invited Papers and Presentations

- *Coding for Visible Light Communication Systems*, Information Theory and Applications (ITA) Workshop, San Diego, February 12-17, 2017
- *On the Estimator-Correlator Receiver Structure and its Implications on Receiver Design*, University of South Florida, May 25, 2014
- *Proving the Efficiencies of a Two-way Relay System*, at NIweek RF and Communication Research Track, August 7, 2012
- *On the Secrecy Capacity per Unit Cost of the Wiretap Channel*, University of Cyprus, Nicosia, Cyprus, March 19, 2009
- *On the Secrecy Capacity per Unit Cost of the Wiretap Channel*, Cyprus University of Technology, Limassol, Cyprus, March 18, 2009
- *Secrecy Capacity per Unit Cost for the Gaussian MIMO Wiretap Channel*, Information Theory and Applications (ITA) Symposium, UCSD, February 9-13, 2009 (with Mustafa El-Halabi and Tie Liu)
- *On the insufficiency of linear solutions for the index coding problem*, Information Theory and Applications Symposium, UCSD, January 27-February 1, 2008 (with Salim Yaacoub El Rouayheb and Alex Sprintson)
- *Recursive Precoder Quantization for MIMO-OFDM Systems over Frequency Selective Channels*, IST Mobile and Wireless Communications Summit, Budapest, Hungary, July 2007
- *On the Estimator-Correlator and the Search for the Optimum Transmit Point*, Distinguished Lecturer Series, Erik Jonsson School of Engineering and Computer Science, University of Texas at Dallas, March 2007
- *Robust Network Coding for Bidirected Networks*, Information Theory and Applications Symposium, UCSD, January 29-February 2, 2007 (with Salim Yaacoub El Rouayheb and Alex Sprintson)
- *On the Error Exponent of the Wideband Relay Channel*, European Signal Processing Conference (EUSIPCO), Florence, Italy, September 2006.
- *Designing Failure-tolerant Network Codes*, IEEE Communication Theory Workshop (CTW), Puerto Rico, May 2006 (with Salim Yaacoub El Rouayheb and Alex Sprintson)
- *Simple Network Codes for Instantaneous Recovery from Edge Failures in Unicast Connections*, Information Theory and Applications –Inaugural Symposium, UCSD, February 6-10, 2006 (with Salim Yaacoub El Rouayheb and Alex Sprintson)
- *A Low Complexity Iterative Detector for MIMO Systems*, Proceedings of the 2004 Asilomar Conference, Pacific Grove, CA, November 2004 (with Y. Xie).
- *On the Estimator-Correlator Receiver Structure and its Application to MIMO Fading Channels*, University of Cyprus, Nicosia, Cyprus, July 2004
- *SAGE-aided, List-BLAST Detection for MIMO Systems*, 2004 Asilomar Conference, Pacific Grove, CA, November 2004 (with Y. Xie and Q. Li)
- *Some Implications of the Estimator-Correlator Structure on Receiver Design*, University of Athens, Greece, May 2004
- *On Channel Estimation for MIMO Fading Channels*, IEEE Communication Theory Workshop, Capri Island, Italy, May 2004
- *The Estimator-Correlator Receiver and its Impact on Receiver Design*, Harvard University, November 1, 2002
- *The Estimator-Correlator Receiver: The Gift that Keeps on Giving*, Texas Instruments, Inc., October, 2002
- *Some Results on the Sum-Rate Capacity of MIMO Fading Channels*, (with Y. Xie) IEEE International Symposium on Advances in Wireless Communications (ISWC'02), Victoria, BC, Canada September 2002
- Keynote talk, International Conference on *Wireless and Optical Communications* (WOC-2002), July 17-19, 2002, Banff, Canada

- *Some Results on Channel Estimation and Detection for Space-Time OFDM Systems*, (with Y. Xie) IEEE Information Theory Workshop, Cairns, Australia, September 2001
- *Receiver Design for Space-Time Coded Systems*, University of Texas at Austin, March 2, 2001
- *Receiver Design for Space-Time Coded Systems*, Texas Instruments, Inc., October 2000
- *Sequence Estimation for Space-Time Coded Systems*, Motorola Inc., August 2000
- *Exploiting Faster-than-Nyquist Signaling*, Texas Instruments, Inc., September 2000
- *On The Application of the EM Algorithm in Telecommunications*, Donald L. Snyder Workshop, Washington University, St. Louis, January 14-15, 2000
- *On the Use of Trellis-Coded Modulation for 3G CDMA Systems*, Nortel Networks Wireless Forum, Dallas, Texas, October 1999
- *Implicit Diversity Combining Based on the EM Algorithm for Fading Channels with Correlated Path Components*, (with P. Spasojevic) WCNC '99, Baton Rouge, LA, September 1999
- *Approximate ML Multi-User Detectors for Synchronous DS/CDMA Channels*, (with Q. Li) CISS '99, Johns Hopkins University, Baltimore, MD, March 1999
- *On the Use of the EM Algorithm in Telecommunications*, University of Texas at Austin, March 1999
- *Sequence Estimation in Interference Via the EM Algorithm* (with P. Spasojevic) IEEE Communication Theory Workshop, Captiva Island, Florida, May 1998
- *Sequence Estimation for Degraded Channels via the EM Algorithm*, AT&T Labs-Research, March 20, 1998
- *Interference Rejection for Spread-Spectrum Systems Using the EM Algorithm*, Tyrrhenian International Workshop on Digital Communications, Italy, September 1997
- *Sequence Estimation for Channels with Memory Via the EM Algorithm*, IEEE Communication Theory Workshop, Tucson, Arizona, April 1997
- *Carrier Acquisition for QAM Constellations*, Rice University, April 1996
- *Block-by-Block Channel and Sequence Estimation for ISI/Fading Channels*, 1995 Tyrrhenian International Workshop on Digital Communications, Viareggio, Italy, September 1995
- *On the Application of the EM Algorithm to Sequence Estimation for Degraded Channels*, University of Texas, San Antonio, November 1994
- *Chip Synchronization for Optical OPPM*, XXIVth General Assembly of the International Union of Radio Science (URSI), Kyoto, Japan, August 1993
- *The Near-Far Problem in Spread-Spectrum Road-Automobile Communications*, American Control Conference (ACC), Chicago, IL, June 1992
- *A Position Estimation Algorithm for Vehicle Following*, American Control Conference (ACC), Chicago, IL, June 1992.
- *Algorithms for Joint Synchronization and Detection*, 1991 Tyrrhenian International Workshop on Digital Communications, Tyrrhenia, Italy, September 1991
- *Sequence Estimation in the Presence of Phase-Errors Via the EM Algorithm*, at the Fourth Texas Systems Day, Austin, Texas, November 10, 1990
- *Synchronization for Optical Communication Systems*, at the IEEE Communication Theory Workshop, Howey-in-the-Hills, Florida, April 1987

### Journal Publications

1. Yazan H. Al-Badarneh, Mohamed-Slim Alouini and Costas N. Georgiades, *Performance Analysis of Monostatic Multi-Tag Backscatter Systems with General Order Tag Selection*, IEEE Wireless Communication Letters, Vol. 9, No. 8, pp. 1201-1205, August 2020. DOI: [10.1109/LWC.2020.2985360](https://doi.org/10.1109/LWC.2020.2985360).
2. Yazan H. Al-Badarneh, Costas N. Georgiades and Mohamed-Slim Alouini, *On the Throughput of Interference-Based Wireless Powered Communications with Receive Antenna Selection*, IEEE Transactions in Vehicular Technology, Vol. 69, No. 3, pp. 3048-3056, March 2020. DOI: [10.1109/TVT.2020.2966698](https://doi.org/10.1109/TVT.2020.2966698)



3. Carlos E. Mejia, Costas N. Georghiades, *Coding for Visible Light Communication Systems Using Color-Shift-Keying Constellations*, IEEE Transactions on Communication, Vol. 67, No. 7, pp. 4955-4966, July 2019. DOI: 10.1109/TCOMM.2019.2907939
4. Yazan H. Al-Badarneh, Costas N. Georghiades and Mohamed-Slim Alouini, *Asymptotic Performance Analysis of Generalized User Selection for Interference-Limited Multiuser Secondary Networks*, IEEE Transactions on Cognitive Communications and Networking, Vol. 5, No. 1, pp. 82-92, March 2019.
5. Yazan H. Al-Badarneh, Costas N. Georghiades, Redha M. Radaydeh and Mohamed-Slim Alouini, *On the Secrecy Performance of Generalized User Selection for Interference-Limited Multiuser Wireless Networks*, IEEE Transactions in Vehicular Technology, Vol. 67, Issue 12, December, 2018.
6. Yazan H. Al-Badarneh, Costas N. Georghiades and Mohamed-Slim Alouini, *Asymptotic Performance Analysis of the  $k$ -th Best Link Selection over Wireless Fading Channels: An Extreme Value Theory Approach*, IEEE Transactions in Vehicular Technology, Vol. 67, No. 7, July 2018. DOI: 10.1109/TVT.2018.2798501
7. Angelos D. Liveris and Costas N. Georghiades, *Faster-than-Nyquist Signaling: A Concept Whose Time has Come?* IEEE ComSoc Technology News, February 2017. (Invited, tutorial)
8. Carlos E. Mejia, Costas N. Georghiades, Mohamed Abdullah and Yazan H. Al-Badarneh, *Code Design for Flicker Mitigation in Visible Light Communications Using Finite State Machines*, IEEE Transactions on Communications, Vol. 65, No. 5, May 2017.
9. Ahsan Aziz, Shuguang Cui and Costas N. Georghiades, *Linearized Robust Beamforming for Two-Way Relay Systems*, IEEE Signal Processing Letters, August 2014.
10. Armin Banaei, Costas N. Georghiades and Shuguang Cui, *Large Overlaid Cognitive Radio Networks: From Throughput Scaling to Asymptotic Multiplexing Gain*, IEEE Transactions on Wireless Communication, June 2014.
11. Armin Banaei, Darren B.H. Kline, Costas N. Georghiades and Shuguang Cui, *On Asymptotic Statistics for Geometric Routing Schemes in Wireless Ad-Hoc Networks*, IEEE/ACM Transactions on Networking, February 2014.
12. N. Rahimian, C.N. Georghiades, M.Z. Shakir and K. Qaraqe, *On a Probabilistic Model for Primary and Secondary User Activity for OFDMA-Based Cognitive Radio Systems: Spectrum Occupancy and System Throughput Perspectives*, IEEE Transactions on Wireless Communication, pp. 356-369, January 2014.
13. Mustafa El-Halabi, Tie Liu and Costas N. Georghiades, *Secrecy Capacity per Unit Cost*, IEEE Journal on Selected Areas in Communications - Signal Processing Techniques for Wireless Physical Layer Security, September 2013.
14. N. Rahimian, H. Celebi, C.N. Georghiades and K. Qaraqe, *A Probabilistic Model of Spectrum Availability for OFDMA Based Cognitive Radio Systems*, IEEE Communication Letters, vol. 16, pp. 1780-1783, November 2012.
15. Mustafa El-Halabi, Tie Liu, Costas N. Georghiades and Shlomo Shamai, *Secret Writing on Dirty Paper: A Deterministic View*, IEEE Transactions on Information Theory, vol. 58, No. 6, pp. 3419-3429, June 2012.
16. Salim Y. El Rouayheb, A. Sprintson, and C.N. Georghiades, *Robust network codes for unicast connections: A Case Study*, IEEE/ACM Transactions on Networking, Vol. 19, No. 6, December 2010.
17. S. El Rouayheb, A. Sprintson and C.N. Georghiades, *On the Index Coding Problem and its Relation to Network Coding and Matroid Theory*, IEEE Transactions on Information Theory, vol. 56, No. 7, pp. 3187-3195, July 2010.
18. Qiang Li, Jing Zhu, Qinghua Li and C. N. Georghiades, *Efficient Spatial Covariance Estimation for Asynchronous Co-channel Interference Suppression in MIMO-OFDM Systems*, IEEE Transactions on Wireless Communications, Vol. 7, No. 12, pp. 4849-4853, December 2008.
19. Y. Xie, Q. Li, and C.N. Georghiades *On Some Near Optimal Low Complexity Detectors for MIMO Fading Channels*, IEEE Transactions on Wireless Communications, Vol. 6, pp. 1182-1186, April 2007.



20. Vladimir M. Stankovic, Angelos D. Liveris, Zixiang Xiong, Costas N. Georghiades, *On Code Design for the Slepian-Wolf Problem and Lossless Multiterminal Networks*, IEEE Transactions on Information Theory, Vol. 52, April 2006.
21. Y. Xie, C.N. Georghiades, and K. Rohani, *Optimal Bandwidth Allocation for the Data and Feedback Channels in MISO-FDD Systems*, IEEE Transactions on Communications, Vol. 54, pp. 197-203, February 2006.
22. Yongzhe Xie, Costas N. Georghiades, *Some Results on the Sum-rate Capacity of MIMO Fading Broadcast Channels*, IEEE Transactions on Wireless Communications, Vol. 5, pp. 377-383, February 2006.
23. W. He and C.N. Georghiades, *Computing the Capacity of a MIMO Fading Channel Under PSK Signaling*, IEEE Transactions on Information Theory, Vol. 51, pp. 1794-1803, May 2005.
24. Yongzhe Xie, Costas N. Georghiades and Ari Arapostathis, *Minimum Outage Probability Transmission with Imperfect Feedback for MISO Fading Channels*, IEEE Transactions on Wireless Communications, Vol. 4, pp. 1084-1091, May 2005.
25. S. Choe and C.N. Georghiades, *A Trellis-Coded DS/CDMA System in Rayleigh Fading Channels*, IEEE Transactions on Communications, Vol. 53, pp. 405-407, March 2005.
26. Lori A. Dalton and Costas N. Georghiades, *A Full Rate, Full Diversity Four Antenna Quasi-Orthogonal Space-Time Block Code*, IEEE Transactions on Wireless Communications, Vol. 4, No. 2, pp. 363-366, March 2005.
27. Jing Li, K. Narayanan and C.N. Georghiades, *An Efficient Algorithm to Compute the Euclidean Distance Spectrum of A General Inter-symbol Interference Channel and Its Applications*, IEEE Transactions on Communications, Vol. 52, pp. 2041-2046, December 2004.
28. Murat Uysal and C.N. Georghiades, *Upper Bounds on the BER performance of MTCM-STBC Schemes over Shadowed Rician Fading Channels*, EURASIP Journal on Applied Signal Processing, Special issue on *Advances in Smart Antennas*, vol. 2004, no. 9, p. 1238-1245, August 2004.
29. Murat Uysal and C.N. Georghiades, *Effect of Shadowing on the Performance of Space-Time Trellis Coded Systems*, IEEE Transactions on Wireless Communications, Vol. 3, pp. 1037-1042, July 2004.
30. Murat Uysal and C.N. Georghiades, *On the Error Performance Analysis of Space-Time Trellis Codes*, IEEE Transactions on Wireless Communications, Vol. 3, pp. 1118-1123, July 2004.
31. Thomas Cassaro and C.N. Georghiades, *Frame Synchronization for Coded Systems over AWGN Channels*, IEEE Transactions on Communications. Vol. 52, pp. 484 – 489, March 2004.
32. Jing Li, Y. Cai, K. Narayanan, A. Lucero, A. Pilipetskii and C.N. Georghiades, *On the Bit-Error Rate of Product Accumulate Codes in Optical Fiber Communications*, IEEE Journal of Lightwave Technology, vol. 22, No. 2, February 2004.
33. Jing Li, K. Narayanan and C.N. Georghiades, *Product Accumulate Codes: A Class of Capacity-Approaching, Low Complexity Codes*, IEEE Transactions on Information Theory, Vol. 50, No. 1, pp. 31-46, January 2004.
34. Qinghua Li, C.N. Georghiades and X. Wang, *Blind Multiuser Detection in Uplink CDMA with Multipath Fading: A Sequential EM Approach*, IEEE Transactions on Communications, Vol. 52, pp. 71-81, January 2004.
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- Pinpoint Communications, Inc.
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- Allied Signals, Inc.
- Expert witness for Mills, Shirley, Eckel & Bassett, L.L.P.
- Invocon, Inc.

### Current Ph.D. Students

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34. Arzu Karaer, *Optimum Bit-by-Bit Power Allocation for Minimum Distortion Transmission*, December 2005.
35. Spyros Spyrou, *Linear Block Codes for Block Fading Channels Based on Hadamard Matrices*, December 2005.
36. Dana Jaber, *MIMO Detection by a Colony of Ants*, May 2006. (Currently with Ericson, Dallas, Texas)
37. Wenyan He, *Constrained Capacity of MIMO Rayleigh Fading Channels*, May 2011.

### **ME Students Graduated**

Scott A. Slaton, ME, 1989, Edward C. Hudek, M.E., 1989, Benjamin M. Butchko, M.E., 1989, Young Chavez, ME, 1994, Christopher Money, ME, 1998, Andiko Syahriza, ME, 1998, Antony Nunley, ME, 1998, Nusrat Habib, ME, 1998, Sung-Hyun Jung, ME, 1998, Camille Lowerie, ME, 1998, Hussain Mizra, ME, 1998, John Lemons, ME, 1998, Ying-Wen Li, ME, 1998, Junmei Wang, ME, 1998, Briant Swint, ME, 1998, Shahid Ayyub, ME, 1999, Vidhya Krishnamoorthy, ME, May 2002.

### **Undergraduate Research Advising**

- 2010-2012: Andrew Young, “Channel Coding Using Sudoku” (admitted as Ph.D. student at MIT)
- 2010: Andrew Young, “Noise Cancellation”
- 2004: Richard Graff, Jarrod Breclaw, Massimo Allegritti (Italy)
- 2003 Andrew Young, Daniel Shultz (Lamar University), John Lee
- 2002: Julia Croy
- 2001: Andrew Puryear (NSF Fellowship, Ph.D. from MIT, 2011)
- 1997: Joseph Pautler (NSF Fellowship)
- 1986: Moe Win, Undergraduate thesis: *PPM Sequences with Desirable Correlation Properties* (currently, Professor at MIT)