CURRICULUM VITAE

Bane Vasić
The University of Arizona
Department of Electrical and Computer Engineering
Department of Mathematics
Tel: +1 520-626-5550
E-mail: vasic@ece.arizona.edu
Web: http://www.ece.arizona.edu/~vasic

EMPLOYMENT

The University of Arizona, Tucson	2000-present
Professor of Electrical Engineering and Mathematics	
da Vinci Circle Fellow	
Bell Laboratories	1998-2000
Member of Technical Staff	
Kodak Research Laboratories	1997-1998
Senior Research Scientist	
Rochester Institute of Technology	1996-1997
Research Fellow	
University of Nis, Serbia	1994-1996
Assistant Professor	

EDUCATION

University of Nis, Serbia	1994
Ph.D. in Electrical Engineering	
The youngest Ph.D. at University of Nis, School of Engineering	
University of Nis, Serbia	1991
MS in Electrical Engineering **University of Nis, Serbia**	1989
Dipl.-Ing. in Electrical Engineering	
Award for a student with the largest GPA at the University	
Serbian Academy of Science and Arts (SANU) Scholarship	

HONORS AND DISTINCTIONS

IEEE Fellow	2013
For contributions to coding theory and its application	
in data storage systems and optical communications	
IEEE Data Storage Paper Award	2009
Fulbright Scholar	2015
Communication Theory Workshop Best Poster Award	2014
Kenneth Von Behren Chair	2012
da Vinci Fellow	2012
Serbian Academy of Sciences and Arts Scholarship	1986
Vuk Karadzic Award	1984

RESEARCH HIGHLITS

Director of Error Correction Coding Laboratory: Receives continual funding support from NSF, IDEMA-ASTC, DARPA, INSIC, and Seagate.
Bell Labs: An inventor of the soft error-event decoding algorithm, and the key architect of a detector/decoder for Bell Labs magnetic recording read channel chips which were regarded as the best in industry. Different variants of this algorithm were implemented in virtually all magnetic hard drives.
LDPC Codes: Pioneering work on structured low-density parity check (LDPC) error correcting codes and iterative decoders. Designed of codes and decoders with best error-floor performance known today.
Codelucida: President and Founder of Codelucida, a startup company based on intellectual property developed on the NSF funded project.
Data Storage: Serves as a Chair of the IEEE Data Storage Technical Committee.

FUNDED RESEARCH HISTORY

CCSS: Small: Enabling High-Speed Communication over Turbulent Free-Space Optical Links by Employing Spectral-Spatial Schemes
   NSF-CIF, 08/01/2015 - 06/31/2018 $345,825 (50%)
Read Channel Modeling and Two-Dimensional Modulation Codes and Detectors for TDMR
   IDEMA-ASTC, 06/10/2014-06/30/2015, $81,892 (100%)
Generalized Low-Density Parity-Check Codes for a 4KB Sector Format
   Seagate Technology, 10/15/2013 – 01/14/2014 $82,382 (100%)
Read Channel Modeling and Two-Dimensional Modulation Codes and Detectors for TDMR
   IDEMA-ASTC, 10/01/2012-09/30/2014, $90,000 (100%)
Construction of Hybrid Generalized Low-Density Parity-Check Codes Free of Small Trapping Sets
   Seagate Technology, 10/15/2012 – 01/14/2013 $82,556 (100%)
Read Channel Modeling and Two-Dimensional Modulation Codes and Detectors for TDMR
   IDEMA-ASTC, 08/01/2012–06/31/2013, $74,000 (100%)
Construction of Hybrid Generalized Low-Density Parity-Check Codes Free of Small Trapping Sets
   Seagate Technology, 08/01/2011 – 07/30/2012 $82,701 (100%)
Read Channel Modeling and Two-Dimensional Modulation Codes and Detectors for TDMR
   IDEMA-ASTC, 08/01/2011-06/31/2012, $18,500 (100%)
NSF-CIF: Coding and Detection for Two-dimensional Magnetic Recording Systems
   NSF-CIF, 08/01/2013 - 07/31/2016 $338,553 (100%)
CIF: Medium: Iterative Decoding Beyond Belief Propagation
   NSF-CIF, 9/1/10-8/31/14, $675,000 (100%)
Knowledge Enhanced Compressive Measurement
   DARPA, 01/01/2011-12/31/2013, $4,298,972 (12%)
NSF-TF: Error Correction Algorithms for DNA Repair: Inference, Analy-

sis, and Intervention
 NSF-TF, 9/1/08-8/31/11, $300,000 (100%)

NSF-ECCS: Multiplexing, Modulation, Coding and Detection Technologies Enabling Hybrid RF-Optical and Microwave-Optical Communications
 NSF-ECCS, 8/1/07-7/31/10, $325,000 ((50 %))

Error Correction Systems for Nano-Scale Fault-Tolerant Memories
 NSF-TF, 10/1/06-9/30/09, $300,000 (100%)

NSF: CCR: Constrained and Error Control Codes for DNA Computers
 NSF-TF, 9/1/05-8/31/06, $30,000 (100%)

NSF-ITR: Medium: Forward Error Correction Codes
for Next Generation Optical Networks
 NSF-ITR, 9/03-8/08, $2,500,000 (100%)

NSF-CCR: Low-Density Parity Check Codes for Ultra-High Speed Communications Systems
 NSF-CCR,8/01-7/06, $225,000 (100%)

Media Pipe
 through Luleå Institute of Technology, Sweden, 2/04-5/06, $5,000,000 (10 %)

NSF Research Experience for Undergraduates
 NSF-CCR and NSF-ITR, 8/04-8/07, $24,000 (100%)

Technology Codes and Detectors for Heat-Assisted Magnetic Recording
 Seagate Technology, INSIC-HAMR, 4/04-1/08, $204,000 (100%)

Spectrum Shaping Codes for Perpendicular Magnetic Recording Systems
 Seagate Technology, 4/01-4/02, $30,000 (100%)

Constrained Codes for Perpendicular Magnetic Recording Systems
 Seagate Technology, 8/01-6/03, $54,000 (100%)

Combinatorial Construction of Low-Density Parity Check Codes
 Seagate Technology, 5/01-5/02, $46,000 (100%)

INSIC Detection and Coding for Two-dimensional Magnetic Recording
 INSIC, 10/08-10/09, $17,500 (100%)

Continuing Research on LDPC Codes with Low Error-Floors
 INSIC, 10/05-10/06, $15,000 (100%)

Toward the Ideal LDPC Code: Large dmin, High Rate, Efficiently Encodable/Decodable
 INSIC,1/04-12/04, $15,000 (100%)

Advancing LDPC Code Design, Analysis, and Decoding
 INSIC-EHDR, 1/03-12/03, $45,000 (100%)

Low Complexity Coding Schemes For 1 Tbit/In2
Perpendicular Recording
 INSIC, 1/01-12/01, $54,000 (100%)

Structured Iteratively Decodable Codes for Magnetic Recording
 INSIC, 11/00-10/01, $83,250 (100%)

Advanced LDPC Code Design and Analysis for High-Density Tape Recorders
 INSIC, 1/03-12/03, $30,000 (100%)

LDPC Code Design and Analysis for High-Density Tape Recorders
 INSIC, 1/02-12/02, $45,000 (100%)

PROFESSIONAL ACTIVITIES

PROFESSIONAL SOCIETIES

IEEE Communications Society   2015
  Chair, Data Storage Technical Group
IEEE Communications Society   2011-present
  Chair, Tucson Joint AP/MTT/EMC/COMM Chapter
IEEE Society   1991-present
  Student Member, Member, Senior Member, Fellow
IEEE Communications Society   2001-present
  Member, Communication Theory Technical Committee
IEEE Communications Society   2001-present
  Member, IEEE Data Storage Technical Committee
IEEE Standardization Association   2013-present
  Member, IEEE Working Group on Error Correction Coding
  for Non-Volatile Memories

EDITORIAL WORK

IEEE Journal on Selected Areas in Communications   2014-2016
  Guest Editor
  Special Issue on Channel Modeling, Coding and Signal Processing
  for Novel Physical Memory Devices and Systems
IEEE Transactions on Magnetics   2000-present
  Editorial Board Member
IEEE Journal on Selected Areas in Communications   2012-2014
  Guest Editor
  Special Issue on Communication Methodologies
  for Next-Generation Storage Systems
IEEE Journal on Selected Areas in Communications   2007-2009
  Guest Editor
  Special Issue on Data Communication Techniques
  for Storage Channels and Networks
American Mathematical Society   2008   *Book Co-Editor*
  Advances in Information Recording
  Co-Organizer
CRC Handbook of Computer Engineering   2000-2001
  Chapter Editor
  Read channels for magnetic recording
CRC Handbook   2002-2004
  Book Co-Editor
  Coding and Signal Processing for Magnetic Recording Systems
CRC Handbook   2004-2006
  Book Co-Editor   Advanced Error Control Techniques for Data Storage Systems

CONFERENCE ORGANIZATION

International Symposium on Information Theory	
and Applications (ISITA 2014)	2014
Session Organizer, Two Dimensional Magnetic Recording	
IEEE International Conference on Communications (ICC 2010)	2010
Symposium Co-Chair, Communication Theory Symposium	
IEEE Communication Theory Workshop (CTW 2007)	2007
General Co-Chair	
IEEE International Conference on Communications (ICC 2006)	2006
Symposium Co-Chair, Communication Theory Symposium	
IEEE International Conference on Communications (ICC 2005)	2005
Technical Program Chair, Communication Theory Symposium	
IEEE International Conference on Communications (ICC 2003)	2005
Technical Program Chair, Communication Theory Symposium	
IEEE Communication Theory Workshop, (CTW 2002)	2002
Technical Program Chair	
Los Alamos Workshop on Applications of Statistical Physics	
to Coding Theory	2005
Co-Organizer,Technical Program Chair	
IEEE Communications Society Best Paper Award Committee	
Member	
DIMACS Workshop and Workgroup on Theoretical Advances	
in Information Recording	2004
Co-Organizer, General Co-Chair	
IEEE Communications Theory Workshop (CTW 2003)	2003
Co-Organizer	
Information Storage Industry Consortium Quarterly Meeting	2002

TECHNICAL PROGRAM CHAIR COMMITTEES

International Symposium on Information Theory (ISIT)

IEEE International Conference on Communications (ICC)

IEEE Global Communications Conference (GLOBECOM)

International Symposium on Turbo Codes & Related Topics (ISTC)

Conference Computer Networks (CN)

International Conference on Magnetics (INTERMAG)

Data Compression Conference (DCC)

CONSULTING

Seagate Technology

Weil, Gotshal & Manges LLP

Quinn, Emanuel Urquhart & Sullivan, LLP

Kirkland & Ellis LLP

Fletcher Yoder, Houston

DLA Piper Rudnick Gray Cary US LLP

Luleå University of Technology, Luleå, Sweden

REVIEWING

PROPOSALS

National Security Agency (NSA), American Mathematical Society, National Science Foundation (NSF) , Qatar National Research Fund, National Science Foundation (NSF) Grant Opportunities for Academic Liaison with Industry (GOALI) Program, Natural Sciences and Engineering Research Council of Canada (NSERC), Israel Science Foundation, Science Foundation Ireland, Engineering and Physical Sciences Research Council of United Kingdom, Killam Research Fellowships, Canada, National Research Foundation of South Africa, Korean Ministry of Education, Science, and Technology (MEST), Indian Institute of Science, Bangalore, India, Office of Space Technology and Industry (OSTIn), Singapore Economic Development Board (SEDB) R&D Grants, IEEE Fellow Committee, Serbian Ministry of Sciences, Belgrade, Serbia, Best Technological Innovation Competition, IEEE Communications Society Best Paper Award Committee, Signal Processing and Coding for Data Storage, IEEE Information Theory Society Best Student Paper Award Committee, Signal Processing and Coding for Data Storage, Department of Homeland Security

PROMOTIONS AND AWARD COMMITTEES

University of Southern California, University of Massachusetts Amherst, University of Edinburg, New Mexico State University, Qualcomm, Marvell, Western Digital, LSI Logic, Avago, National Institute of Health (NIH), Universite de Brest, Los Alamos National Lab

JOURNALS

Nature, IEEE Transaction on Information Theory, IEEE Transaction on Communications, IEEE Journal on Selected Areas in Communications, IEEE Photonics Technology Letters, IEEE Journal of Lightwave Technology, IEEE Journal of Circuits and Systems, IEEE Signal Processing Magazine, IEEE Communications Letters, IEEE Transactions on Circuits and Systems I, IEEE Transactions on Wireless Communications, IEEE Transaction on Magnetics, Facta Universitatis, European Transactions on Communications, International Journal of Modeling and Simulation, OSA Optics Express, Electronics and Telecommunications Research Institute (ETRI) Journal, IEICE Transactions on Information and Systems, Journal of Optical Communications, Micro & Nano Letters

CONFERENCES

International Conference on Communications (ICC 1999-2014), International Conference on Magnetics (INTERMAG 1999-2014), IEEE International Symposium on Information Theory (ISIT 2003-2014), IEEE Conference on Telecommunication (TELFOR 1996-1998), IEEE Conference on Television and Cable Services (TELSIKS 1997-2013), Global Communications Conference (Globecom 2001-14) IEEE The Magnetic Recording Conference (TMRC 1998-2000, 2010-2014), Perpendicular Magnetic Recording Conference 2004, International Scientific Conference on Information, Communication and Energy Systems and Technologies (ICEST 2002), IASTED Conference on Communication Systems and Applications (CSA 2005), International Symposium on Turbo Codes, International ITG Conference on Source and Channel Coding, Vehicular Technology Conference (VTC 2003), Canadian Workshop on Information Theory (CWIT 2010-2011), University of Arizona College of Engineering Monitoring Workshop on Promotion and Tenure

CURRENT GRADUATE STUDENTS

CURRENT

Xiao Xin, Ph.D.
Nithin Raveendra, Ph.D.
Mohsen Bahrami, Ph.D.

FORMER POST-DOCTORAL FELLOWS

Ivan Djordjevic (University of Arizona), Stojan Denic (Toshiba, UK), Jaime Anguita (Universidad de los Andes, Santiago, Chile), Alban Goupil (Universit de Reims Champagne-Ardenn, France), Velimir Ilic (University of Darmstadt, Germany), Elza Dupraz (Telecom Bretagne, France)

FORMER GRADUATE STUDENTS

Olgica Milenkovic (University of Illinois Urbana-Champaign), Stojan Denic (Toshiba, UK), Sundar Sankaranarayanan (Seagate Technology), Karunakar Pedagani (Mitsubishi Electrics Research), Vijay Venkateswaran (Bell Labs), Varsha Rao (Qualcomm), Lingling Pu (University of Arizona), Sara Sundberg (Ericson, Sweden), Milos Ivkovic (Cornell University), Jaime Anguita (Universidad de los Andes, Santiago, Chile), Lucille Sassateli (Universite Nice Sophia Antipolis, France), Rathnakumar Radhakrishnan(Marvell Semiconductor), Shashi Kiran Chilappagari (Marvell Semiconductor), Anantha Raman Krishnan (Western Digital), Dzung Viet Nguyen (Marvell Semiconductor), Shiva Planjery (Codelucida), Ludovic Danjean (Seagate Technology), Tao Jiang (Rice University), Seyed Mehrdad Khatami (Marvell Semiconductor), Vida Ravanmehr (University of Illinois Urbana-Champaign)