Ata Chizari

Contact Information

Department of Electrical Engineering
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Optical Networks Research Lab (ONRL)
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Research Interests

- Biomedical Photonic Imaging
- Nano-Photonics
- Integrated Optics
- Optical Networking
- Visible Light Communications and Indoor Positioning
- Digital Signal Processing
- Free-Space and Underwater Wireless Optical Communications
- Coding and Information Theory

Education

Shahid Beheshti University (SBU), Tehran, Iran Sep. 2013 - Sep. 2015

M.Sc. with focus on Communication Systems; **GPA:17.79/20.00 (3.81/4)**

- Thesis: Designing A Dimmable OPPM-Based VLC System Under Channel Constraints.
  Supervisor: Dr. Akbar Dargahi

Tafresh University, Tafresh, Iran Sep. 2009 - Sep. 2013

B.Sc. with focus on Electronics; **GPA:18.72/20.00(3.96/4)**

- Thesis: Remote Control Switching Device of Electricity Keys with Capability of Easy Installation.
  Supervisor: Dr. Ali M. Fotouhi

Honors & Awards

- IEEE/IET Student Travel Grant Award for 10th IEEE/IET CSNDSP 2016, Prague 2016
- Financial Support for U.S. Patent Application by Iran National Science Foundation 2016
- Ranked 3rd among Communication Systems students of Shahid Beheshti University 2015
- Member of swimming team of Shahid Beheshti University at 12nd Nationwide Student Sport Olympiad 2014
- Accepted as talented student for graduate studies at Shahid Beheshti University 2013
- Ranked 1st among 120 students in class of 2009 Electrical Engineering entrants 2013
- Ranked top 3% in the National Entrance Exam among Electrical Engineering students of Iran for M.Sc. studies 2013
- Ranked top 4% in the Nationwide University Entrance Exam (KONKOOR) for B.Sc. studies 2009
- Ranked 1st among 150 students in class of 2004 Mathematics and Physics of Bahonar High School 2007

Patent & Publications

Patents

- J.A. Salehi, H. Hosseinianfar, and **A. Chizari**, "Geometrical Optics Positioning using Spatial Color Coded LEDs", Filed at **USPTO**, app. No. 15275431, 2016.
- A. M. Fotouhi and **A. Chizari**, "Remote Control Switching Device of Electricity Keys with Capability of Easy Installation", **Iran Patent**, registration number: 73930, 2012.

Journal Papers

- **A. Chizari**, S. AbdollahRamezani, M.V. Jamali, and J. A. Salehi, "Analog Computing Technique Based on Dielectric Meta-reflect-array", **OSA Optics Letters**, vol. 41, no. 15, pp. 3451-3454, August 2016.
- Ali Eshaghian Dorche, Sajjad AbdollahRamezani, **A. Chizari**, and Amin Khavasi, "Broadband, Polarization-insensitive, and Wide-angle Optical Absorber Based on Fractal Plasmonics", **IEEE Photonics Technology Letters**, Vol. 28, no. 22, pp. 2545-2548, 2016.
- M.V. Jamali, **A. Chizari**, and J.A. Salehi, "Performance Analysis of Multi-Hop Underwater Wireless Optical Communication Systems", submitted to **IEEE Photonics Technology Letters**, October, 2016.

Conference Papers

- **A. Chizari**, M.V. Jamali, S. AbdollahRamezani, J.A. Salehi, and A. Dargahi, "Designing A Dimmable OPPM-Based VLC System Under Channel Constraints", 10th IEEE/IET International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP), 2016.
- Ali Lotfi-Rezaabad, Siamak Talebi, and **A. Chizari**, "Two Quasi Orthogonal Space-Time Block Codes with Better Performance and Low Complexity Decoder", 10th IEEE/IET International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP), 2016.
- Elnaz Ghahremanirad, Saeed Olyaee, and **A. Chizari**, "Nano-plasmonic Thin-Film Solar Cell Receiver in Visible Light Communication", 10th IEEE/IET International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP), 2016.
- M.V. Jamali, P. Khorramshahi, A. Tashakori, **A. Chizari**, S. Shahsavari, S. AbdollahRa mezani, M. Fazelian, S. Bahrani, and J.A. Salehi, "Statistical Distribution of Intensity Fluctuations for Underwater Wireless Optical Channels in the Presence of Air Bubbles", Iran Workshop on Communications and Information Theory (IWCIT), 2016.
- M. Fazelian, S. AbdollahRamezani, S. Bahrani, **A. Chizari**, M.V. Jamali, P. Khorramshahi, A. Tashakori, S. Shahsavari, and J.A. Salehi, "Mining Data Sequences Based on Spatially Coded Technique Using Spatial Light Modulator", Iran Workshop on Communications and Information Theory (IWCIT), 2016.
- Saeed Olyaee, Ali Nikoosohbat, Ahmad Mohebzadeh Bahabady, and **A. Chizari**, "Square-Hexagonal Nanostructured Photonic Crystal Fiber At 1550 nm Wavelength", 10th IEEE/IET International Symposium on Communication Systems, Networks and Digital Signal Processing (CSNDSP), 2016.

Professional Experience

Optical Networks Research Lab (ONRL) Sep. 2014 - Present

Research Assistant, Sharif University of Technology

- Opto-Electronics
- Optical Wireless Communications
- Spatial Light Modulation (SLM)
- Visible Light Indoor Positioning

Fiber Optics Communications Lab Jun. 2014 - Jun. 2015

Research Assistant, Shahid Beheshti University

- Simulation and analysis of fiber optic communication systems (Opti-System)
- Implementing an LED-based fiber optic transceiver using evaluation boards

Afra Engineering Group Feb. 2014 - Present

Head of Development, Shahid Beheshti University

- RFID-based smart card service for:
  - The 22nd Iranian Conference on Electrical Engineering (ICEE 2014)
  - The 21st Iranian Conference on Optics and Photonics (ICOP 2015)
  - The 9th Iranian Conference on Machine Vision and Image Processing(MVIP 2015)
  -The 13th International Conference on Information Security and Cryptology (ISC 2016)

Digital Circuits Lab Jan. 2012 - Jun. 2013

Laboratory Assistant, Tafresh University

- Teaching VHDL programming
- Supervising FPGA-based projects of undergraduate students
- Revising laboratory instructions according to FPGA evaluation boards

Technical Review Activity

- IEEE Communications Letters

Membership

- IEEE Communications Society

Teaching Experiences

- Teaching Assistant for "Computer Architecture", Prof A. Raie, Tafresh University Fall 2011
- Teaching Assistant for "Electrical Circuits", Dr. H. Meshgin, Tafresh University Spring 2012
- Teaching Assistant for "Microprocessors", Dr. A.M. Fotouhi, Tafresh University Fall 2012
- Teaching Assistant for "Digital circuits", Dr. A.M. Fotouhi, Tafresh University Fall 2012
- Teaching Assistant for "Electronics", Dr. F. Hajati, Tafresh University Spring 2013
- Teaching Assistant for "Logical Circuits Lab", Prof. M. Eshghi, Shahid Beheshti University Fall 2013
- Teaching Assistant for "Microprocessors Lab", Prof. M. Eshghi, Shahid Beheshti University Spring 2014
- Teaching Assistant for "FPGA Lab", Dr. A. Dargahi, Shahid Beheshti University Fall 2014
- Teaching Assistant for "Fiber Optic Communications", Dr. A. Dargahi, Shahid Beheshti University Fall 2014
- Teaching Assistant for "Fiber Optic Communications", Dr. A. Dargahi, Shahid Beheshti University Spring 2015
- Teaching Assistant for "Fiber Optic Communications", Dr. A. Dargahi, Shahid Beheshti University Fall 2015

Selected Courses

Graduate Courses

- Adv. Communication Theory 17.6/20.0
- Wireless Communications 19.75/20.0
- Inf. Theory and Coding 17.3/20.0
- Spread Spectrum 17.5/20.0
- Optical Comm. Systems 17.0/20.0
- Statistical Optical Comm. ..... audited
- Optical Comm. Networks ..... audited
- Data Communication Networks .... audited
- Adv. Data Comm. Networks ..... audited
- Opto-electronics I 17.7/20.0
- Opto-electronics II ..... audited
- EE seminar 19.0/20.0
- Thesis 19.75/20.0

Undergraduate Courses

- Technical English..... 20.0/20.0
- General Mathematics 20.0/20.0
- General Physics 17.5/20.0
- Engineering Prob. and Stat. 17.5/20.0
- Communication Systems 19.5/20.0
- Communication Circuits 20.0/20.0
- Numerical Calculations 20.0/20.0
- Physic Electronics 19.75/20.0
- Image Processing 20.0/20.0
- Electrical Circuits 18.25/20.0
- Computer Programming (C) 20.0/20.0
- Engineering Mathematics 17.7/20.0
- Electronics I 19.5/20.0
- Electronics II 19.0/20.0
- Electronics III 20.0/20.0
- Engineering Economics 20.0/20.0
- Pulse Circuits 17.25/20.0
- Power Electronics 19.75/20.0
- Linear Control Systems 20.0/20.0
- Electrical Installations 17.0/20.0
- Electrical Measurements 20.0/20.0
- Computer Architecture 17.5/20.0
- Microprocessors 18/20.0
- Thesis 20.0/20.0

Certifications

- Participation in 10^{th} IEEE/IET International Symposium on Communication Systems, Networks, and Digital Signal Processing (CSNDSP), Czech Technical University, Prague — 2016
- Participation in 4^{rd} Iran Workshop on Comm. and Inf. Theory (IWCIT), Sharif University of Technology, Tehran — 2016
- Participation in 3^{rd} Iran Workshop on Comm. and Inf. Theory (IWCIT), Sharif University of Technology, Tehran — 2015
- Participation in 21^{st} Iranian Conference on Optics and Photonics (ICOP), Shahid Beheshti University, Tehran — 2015
- Participation in 22^{nd} Iranian Conference on Electrical Engineering (ICEE), Shahid Beheshti University, Tehran — 2014
- Participation in International Symposium on Telecommunications (IST), Iran Telecommunications Research Center (ITRC), Tehran — 2014
- Participation in workshop on Optical Wireless Communication Systems: Indoor and Outdoor, Iran Telecommunications Research Center (ITRC), Tehran — 2014

Selected Projects and Term Papers

Sharif University of Technology

- Simulation of dielectric meta-transmit-array (CST)
- Design and implementation of visible light indoor positioning system (MATLAB)

- Design and implementation of LED-based illumination systems for indoor and outdoor environments

Shahid Beheshti University

- Developing a GUI-based transceiver with various modulation schemes, such as QAM and DPSK, in the presence of AWGN considering ISI and equalizer effects (Advanced Communications Theory, Monte Carlo Simulation, MATLAB)
- Developing a GUI-based random access network with various techniques, such as ALOHA and CSMA (Wireless Communications, MATLAB)
- Simulation and analysis of an indirect optical fiber transceiver using Mach-Zehnder modulator (Fiber Optic Communications, Opti-system)
- Developing an RFID-based smart card service for conference participants (AVR microprocessors, Altium Designer)

Tafresh University

- Design and implementation of a remote control switching device of electricity key with capability of easy installation (AVR microprocessors, Code Vision AVR, Altium Designer)
- Design and implementation of a switching mode power supply and a power amplifier (Electronics Lab Project, Altium Designer, Fairchild Semiconductor Software)
- Design and implementation of a binary to BCD converter using VHDL on FPGA (Digital Lab, Quartus)
- Design and implementation of an auto-irrigating system for gardens (Microprocessors Lab, Code Vision AVR)

Technical Skills

Computer Skills

- **Numerical Simulations:** Opti-System, COMSOL Multiphysics, CST Design Studio, Code Vision AVR, AVR Studio, Quartus, AutoCAD, Photoshop
- **Programming:** MATLAB, C, LaTeX
- **Computer and OS:** Microsoft Windows, Microsoft Office

Languages

- **English**: Professional working proficiency
- **Persian**: Native

Reference Available to Contact

- **Prof. Jawad A. Salehi (E-mail: jasalehi@sharif.edu)**
  Professor, IEEE Fellow, Electrical Engineering, Sharif University of Technology (PhD: USC)
- **Dr. Akbar Dargahi (E-mail: a-dargahi@sbu.ac.ir)**
  Assistant Professor, Electrical Engineering, Shahid Beheshti University (PhD: Uni. of Wales)
- **Dr. S. Ali Ghorashi (E-mail: a_ghorashi@sbu.ac.ir)**
  Associate Professor, Electrical Engineering, Shahid Beheshti University (PhD: King's Collenge London)
- **Dr. Farah Torkamani-Azar (E-mail: f-torkamani@sbu.ac.ir)**
  Associate Professor, Electrical Engineering, Shahid Beheshti University (PhD: New South Wales University)
- **Dr. Ali M. Fotouhi (E-mail: fotouhi@tafreshu.ac.ir)**
  Assistant Professor, Electrical Engineering, Tafresh University (PhD: Amirkabir Uni. of Tech.)