

Soheil Salehi

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U.S. Permanent Resident

I. Technical Interests

Energy-Efficient and Intelligent Signal Conversion and Processing in Internet of Things (IoT); Spin-Based Devices; Reconfigurable and Adaptive Computer Architectures; Neuromorphic and Biologically-inspired AI Hardware; Hardware Security in IoT

II. Education

Postdoctoral Research Fellow, NSF-Sponsored CIFellow **2020-2022**

ECE Department, University of California Davis, Davis, CA

Mentor: Dr. Houman Homayoun

Project Title: "SHIELD: Secure Hardware for IoT using Emerging-devices against side-channel Deep-learning attacks"

Ph.D., Computer Engineering **2014-2020**

ECE Department, University of Central Florida, Orlando, FL, GPA: 3.9/4.0 Advisor: Dr. Ronald F. DeMara

Dissertation Title: "Energy-Efficient Signal Conversion and In-Memory Computing using Emerging Spin-based Devices"

M.S., Computer Engineering **2014-2016**

ECE Department, University of Central Florida, Orlando, FL

Advisor: Dr. Ronald F. DeMara

Thesis Title: "Towards Energy-Efficient and Reliable Computing: From Highly-Scaled CMOS Devices to Resistive Memories"

B.S., Computer Engineering **2009-2014**

ECE Department, Isfahan University of Technology, Iran, Visiting Student at University of Tehran, 2011-2014

Project Title: "Design and implementation of Embedded Systems for Autonomous Vehicles using Wireless Sensor Networks"

III. Professional Experience

A. Research Experience

Accelerated, Secure, and Energy-Efficient Computing Lab **2020-2022**

Postdoctoral Research Fellow, NSF-Sponsored CIFellow

ECE Dept., University of California Davis

- Devising novel and effective approaches for securing Internet of Things (IoT) hardware against cutting edge Deep-learning-based Power Side-channel Attacks (DeePSAs) using emerging devices.
- Demonstrate innovative use of supervised and unsupervised deep learning approaches to develop the proposed DeePSA, which can accurately estimate the encryption key from sampled power traces even in the presence of process variation, signal noise, and perturbation.
- Demonstrate utilization of commercially available STT-MRAM to design energy and area optimized Look-Up Tables (LUTs) for the encryption hardware to mitigate the proposed DeePSA, called Secure Hardware for IoT using Emerging-devices against side-channel Deep-learning attacks (SHIELD).
- Contributing to prepare funding proposals for NSF, DARPA, ARL, and SRC
- Sub-Advising and mentoring Ph.D., M.S., and B.S. students

Computer Architecture Laboratory

2014-2020

Research Assistant

ECE Dept., University of Central Florida

- o Researched beyond von Neumann computing architectures for Internet of Things (IoT) devices and ambient-powered intelligent edge processing
- o Designed mixed-signal circuits for energy-efficient signal conversion leveraging 2-terminal commercially-available STT-MTJs and 3-terminal emerging SOT-MTJs for digital memory storage and Analog-to-Digital Conversion applications
- o Developed cross-layer algorithmic to hardware approaches for heterogeneous technology reconfigurable computing fabrics for in-situ signal processing
- o Led student contributions to prepare funding proposals for NSF, DARPA, and SRC
- o Sub-Advised and mentored Ph.D., M.S., and B.S. students

Advanced Robotics and Intelligent Systems Laboratory

2013-2014

Research Assistant

ECE Dept., University of Tehran

- o Conducted research on rehabilitation robotics and hardware design and implementation of intelligent robots

B. Teaching Experience

Computer Organization and Design

Fall 2014-Fall 2018

Lab Instructor

ECE Dept., University of Central Florida

- o Sole recipient of the **Award for Excellence by a Graduate Teaching Assistant at the university-level**, 2015-2016
- o Teaching weekly labs to 100+ students per semester; including grading of assignments
- o Designing and preparing project assignments, grading of projects, and tutoring students via post-test remediation sessions
- o Configuring and operating MARS Assembler and Xilinx ISE software and C/C++ and Verilog/VHDL Languages
- o Preparing demonstration of processor RTL and Schematic design using Synopsys' Design Compiler

Electronics I

Spring 2013-Spring 2014

Teaching Assistant

ECE Dept., University of Tehran

Theory of Formal Languages and Automata

Fall 2013-Spring 2014

Teaching Assistant

ECE Dept., University of Tehran

Microprocessors Interfacing Circuit Design

Spring 2013, Spring 2014

Teaching Assistant

ECE Dept., University of Tehran

Microprocessors

Fall 2013

Teaching Assistant

ECE Dept., University of Tehran

Advanced Programming and Laboratory

Spring 2011

Lab Instructor

ECE Dept., Isfahan University of Technology

C. Mentoring Experience

Sub-Advising and Mentoring of Ph.D. and M.S. Students

Computer Architecture Laboratory, University of Central Florida

1. Hossein Pourmeidani (Ph.D. Student)
2. Shaadi Sheikhfaal (Ph.D. Student)
3. Mousam Hossain (Ph.D. Student)
4. Adrian Tatulian (Ph.D. Student)
5. Meghana Reddy Vangala (M.S. Student)
6. Harshit Gupta (M.S. Student)

Sub-Advising and Mentoring NSF Research Experience for Undergraduates (REUs)

Computer Architecture Laboratory, University of Central Florida

1. Gustavo Camero (B.S. Student, Composed two IEEE Manuscripts, Admitted to Comp. Eng. Ph.D. Program at CMU)
2. Adedoyin Adepegba (B.S. Student, Applying for Graduate School, Composed an IEEE Manuscript, Interning at Intel)
3. Paul Wood (B.S. Student, Applying for Graduate School, Composed an IEEE Manuscript, Interning at Intel)
4. Daniel Mulvaney (B.S. Student, Applying for Graduate School, Composed an IEEE Manuscript, Interning at L3Harris)

D. Professional Training

Computer Organization and Design

Fall 2014-Fall 2018

Course Content Development

University of Central Florida

- o Worked closely with two faculty members in order to develop Projects, Lab assignments, Quizzes, Exams, and Course Contents in an innovative electronically-delivered format for about 100 students per semester
- o Designing and Preparing the course web page and online evaluation
- o Developing a new method for lab assignments and lab assessments using Xilinx Basys2 FPGA boards
- o Authoring a 14-Week Lab Manual for the required laboratory component

Preparing Tomorrow’s Faculty

May 2015-August 2015

Academic Career Preparation Training Course (completed as a trainee)

University of Central Florida

- o Creating and organizing course content and related documents
- o Writing a teaching philosophy statement
- o Identifying and discussing relevant issues in teaching and learning
- o Managing students’ behavior through effective policies and expectations
- o Evaluating students’ strengths related to teaching and learning
- o Constructing a teaching portfolio

IV. Publications (*Citations: 231; H-Index: 9; I-Index: 9; Total of 10 Journal and 19 Conference Publications*)

A. Journal Publications

Total of 8 Journal Publications in addition to 2 under review

i. Technical Manuscripts:

8. M. Hossain, **S. Salehi**, D. Mulvaney, and R. F. DeMara, “Leakage and Dynamic Power Scaling for IoT Devices: Trends and Limits for MRAM vs. SRAM,” *IEEE Transactions on Circuits and Systems II: Express Briefs (TCAS-II)*, under review, 2020. (Impact Factor: 3.25)
7. **S. Salehi**, and R. F. DeMara, “Adaptive Non-Uniform Compressive Sensing using SOT-MRAM Multibit Crossbar Arrays,” *IEEE Transactions on Nanotechnology (TNANO)*, under review, 2020. (Impact Factor: 2.292)
6. **S. Salehi**, and R. F. DeMara, “SLIM-ADC: Spin-based Logic-In-Memory Analog to Digital Converter Leveraging SHE-enabled Domain Wall Motion Devices,” *Microelectronics Journal*, vol. 81, pp. 137-143, 2018. (Impact Factor: 1.284)

Special Issue on “Spintronic Integrated Circuits and New Architectures for Low Power Electronics”

5. **S. Salehi**, M. Boloursaz Mashhadi, A. Zaeemzadeh, N. Rahnavard, and R. F. DeMara, “Energy-Aware Adaptive Rate and Resolution Sampling of Spectrally Sparse Signals Leveraging VCMA-MTJ Devices,” *IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS)*, vol. 8, no. 4, pp. 679-692, 2018. (Impact Factor: 3.433)

Special Issue on “Energy-Quality Scalable Circuits and Systems”

4. **S. Salehi**, N. Khoshavi, R. Zand, and R. F. DeMara, “Self-Organized Sub-bank SHE-MRAM-based LLC: an Energy-Efficient and Variation-Immune Read and Write Architecture,” *Integration, The VLSI Journal*, vol. 65, pp. 293-307, 2019. (Impact Factor: 1.150)

Special Issue on “International Symposium on Quality Electronic Design (ISQED) 2017”

3. **S. Salehi**, N. Khoshavi, and R. F. DeMara, “Mitigating Process Variability for Non-Volatile Cache Resilience and Yield,” *IEEE Transactions on Emerging Topics in Computing (TETC)*, in press, January 2018. (Impact Factor: 4.989)

Special Issue on "Reliability-aware Design and Analysis Methods for Digital Systems: from Gate to System Level"

2. **S. Salehi**, D. Fan, and R. F. DeMara, “Survey of STT-MRAM Cell Design Strategies: Taxonomy and Sense Amplifier Tradeoffs for Resiliency,” *ACM Journal on Emerging Technologies in Computing Systems (JETC)*, vol. 13, no. 3, pp. 1-16, 2017. (Impact Factor: 1.367)
1. R. Zand, A. Roohi, **S. Salehi**, and R. F. DeMara, “Scalable Adaptive Spintronic Reconfigurable Logic using Area-Matched MTJ Design,” *IEEE Transactions on Circuits and Systems II: Express Briefs (TCAS-II)*, vol. 63, no. 7, pp. 678-682, 2016. (Impact Factor: 3.25)

ii. STEM Educational Manuscripts:

2. R. F. DeMara, **S. Salehi**, R. Hartshorne, B. Chen, and E. Saqr, “Observable, Traceable, Autograded Computer-Mediated Collaborative Learning,” *Journal of Interactive Learning Research (JILR)*, vol. 30, no. 3, pp. 397-424, September 2019.
1. B. Chen, R. F. DeMara, **S. Salehi**, and R. Hartshorne, “Elevating Learner Engagement and Outcomes using In-Situ Online Formative Assessment in the Engineering Laboratory: A Viable Alternative to Weekly Lab Reports,” *IEEE Transactions on Education*, vol. 61, no. 1, pp. 1-10, February 2018. (Impact Factor: 1.6)

B. Conference Publications.....

Total of 19 Conference Proceedings Publications

i. Technical Manuscripts:

12. A. Tatulian, **S. Salehi**, and R. F. DeMara, “Mixed-Signal Spin/Charge Reconfigurable Array for Energy-Aware Compressive Signal Processing,” in *Proceedings of IEEE International Conference on Reconfigurable Computing and FPGAs (ReConfig'19)*, Cancun, Mexico, December 9-11, 2019.
11. G. Camero, **S. Salehi**, and R. F. DeMara, “A Spin-based Analog to Digital Converter Interactive Simulation Framework,” in *Proceedings of IEEE International Conference on Reconfigurable Computing and FPGAs (ReConfig'19)*, Cancun, Mexico, December 9-11, 2019.

10. S. Sheikhfaal, S. D. Pyle, **S. Salehi**, and R. F. DeMara, "An Ultra-Low Power Spintronic Stochastic Spiking Neuron with Self-Adaptive Discrete Sampling," in *Proceedings of IEEE International Midwest Symposium on Circuits and Systems (MWSCAS'19)*, Dallas, TX, USA, August 4-7, 2019.
9. **S. Salehi**, A. Zaeemzadeh, A. Tatulian, N. Rahnavard, and R. F. DeMara, "MRAM-based Stochastic Oscillators for Adaptive Non-Uniform Sampling of Sparse Signals in IoT Applications," in *Proceedings of IEEE Computer Society Annual Symposium on VLSI (ISVLSI'19)*, Miami, FL, USA, July 15-17, 2019.
8. **S. Salehi**, R. Zand, A. Zaeemzadeh, N. Rahnavard, and R. F. DeMara, "AQuRate: MRAM-based Stochastic Oscillator for Adaptive Quantization Rate Sampling of Sparse Signals," in *Proceedings of ACM Great Lake Symposium on VLSI (GLSVLSI'19)*, Tysons Corner, VA, USA, May 9-11, 2019.
Best Poster of the Conference Award Winner
7. **S. Salehi**, R. Zand, and R. F. DeMara, "Clockless Spin-based Look-Up Tables with Wide Read Margin," in *Proceedings of ACM Great Lake Symposium on VLSI (GLSVLSI'19)*, Tysons Corner, VA, USA, May 9-11, 2019.
6. **S. Salehi**, and R. F. DeMara, "BGIM: Bit-Grained Instant-on Memory Cell for Sleep Power Critical Mobile Applications," in *Proceedings of IEEE International Conference on Computer Design (ICCD'18)*, Orlando, FL, USA, October 7-10, 2018.
5. **S. Salehi**, and R. F. DeMara, "Process Variation Immune and Energy Aware Sense Amplifiers for Resistive Non-Volatile Memories," in *Proceedings of IEEE International Symposium on Circuits and Systems (ISCAS'17)*, Baltimore, MD, USA, May 28-31, 2017.
4. N. Khoshavi, **S. Salehi**, and R. F. DeMara, "Variation-Immune Resistive Non-Volatile Memory using Self-Organized Sub-Bank Circuit Designs," in *Proceedings of IEEE International Symposium on Quality Electronic Design (ISQED'17)*, Santa Clara, CA, USA, March 13-15, 2017.
Best Paper of the Session and Best Paper of The Conference Award Nominee - Top 10%
3. **S. Salehi**, and R. F. DeMara, "Energy and Area Analysis of a Floating-Point Unit in 15nm CMOS Process Technology," in *Proceedings of IEEE SoutheastCon (SECon'15)*, Fort Lauderdale, FL, USA, April 9-12, 2015.
2. R. A. Ashraf, A. Al-Zahrani, N. Khoshavi, R. Zand, **S. Salehi**, A. Roohi, M. Lin, and R. F. DeMara, "Reactive Rejuvenation of CMOS Logic Paths using Self-Activating Voltage Domains," in *Proceedings of IEEE International Symposium on Circuits and Systems (ISCAS'15)*, Lisbon, Portugal, May 24-27, 2015.
1. P. Soleiman, **S. Salehi**, M. Mahmoudi, M. Ghavami, H. Moradi, and H. Pouretamad, "RoboParrot: A Robotic Platform for Human Robot Interaction, Case of Autistic Children," in *Proceedings of IEEE International Conference on Robotics and Mechatronics (ICRoM'14)*, Tehran, Iran, October 15-17, 2014.

ii. STEM Educational Manuscripts:

7. G. Camero, **S. Salehi**, and R. F. DeMara, "Adaptive Behavioral Simulation Framework for 2-Terminal MTJ-based Analog to Digital Converter," in *Proceedings of IEEE Integrated STEM Education Conference (ISEC'20)*, Princeton, New Jersey, March 28, 2020.

6. **S. Salehi**, and R. F. DeMara, “Virtualized Active Learning for Undergraduate Engineering Disciplines (VALUED): A Pilot in a Large Enrollment Classroom,” in *Proceedings of IEEE Frontiers in Education Conference (FIE’19)*, Cincinnati, Ohio, October 16-19, 2019.
5. **S. Salehi**, R. Zand, and R. F. DeMara, “Learner Capstone Panels for Immersing Undergraduates in Mechanisms of Engineering Research,” in *Proceedings of American Society of Engineering Education National Annual Conference (ASEE’19)*, Tampa Bay, Florida, June 15-19, 2019.
4. R. F. DeMara, **S. Salehi**, and N. Khoshavi, S. Pyle, “Scalable Delivery and Remediation of Engineering Assessments using Computer-Based Assessment,” in *Proceedings of IEEE Integrated STEM Education Conference (ISEC’19)*, Princeton, New Jersey, March 16, 2019.
3. R. F. DeMara, **S. Salehi**, B. Chen, and R. Hartshorne, “GLASS: Group Learning At Significant Scale via wifi-Enabled Learner Design Teams in an ECE Flipped Classroom,” in *Proceedings of American Society of Engineering Education National Annual Conference (ASEE’17)*, Columbus, Ohio, June 25-28, 2017.
2. R. F. DeMara, **S. Salehi**, and S. Muttineni, “Exam Preparation through Directed Video Blogging and Electronically-Mediated Realtime Classroom Interaction,” in *Proceedings of American Society of Engineering Education Southeast Section Conference (ASEE-SE’16)*, Tuscaloosa, Alabama, USA, March 13-15, 2016.
1. R. F. DeMara, **S. Salehi**, N. Khoshavi, R. Hartshorne, and B. Chen, “Strengthening STEM Laboratory Assessment Using Student-Narrative Portfolios Interwoven with Online Evaluation,” in *Proceedings of American Society of Engineering Education Southeast Section Conference (ASEE-SE’16)*, Tuscaloosa, Alabama, USA, March 13-15, 2016.

V. Selected Funding Proposal Development

NSF, CISE/CRA-CCC

Award: CIFellow 2020, Awarded Amount to Date: TBD

Composed the proposal titled “SHIELD: Secure Hardware for IoT using Emerging-devices against side-channel Deep-learning attacks”

Principal Investigator (PI)

End Date: August 31, 2022

NSF, ECCS, CCSS

Award Number: 1810256, Awarded Amount to Date: \$441,711.00 End Date: August 31, 2021 (Estimated)

Leading the student contributions to prepare the proposal titled “Cross-layer Adaptive Rate/Resolution Design for Energy-Aware Acquisition of Spectrally Sparse Signals Leveraging Spin-based Devices”

Assisted Through Award of Funding

NSF, CISE/CCS, SHF-Small: Leading the student contributions to prepare the proposal titled “Heterogeneous Technology Fabrics for Next Generation Reconfigurable Computing”

SRC, HWS: Leading the student contributions to prepare the white paper titled “Hardware Trojan Detection utilizing Intelligent Adaptive Compressive Sensing”

SRC, AMS-CSD: Leading the student contributions to prepare the white paper titled “Mixed-Signal Reconfigurable Array for Energy-Aware Neuromorphic Processing”

NSF, CISE/EHR, EXP: Leading the student contributions to prepare the proposal titled “SAPPHIRE: Mining of Computerized Formative Assessments to Automatically Generate Personalized Laboratory Experiences”

NSF, IUSE/EHR, EXP: Leading the student contributions to prepare the proposal titled “BLUESHIFT: Rebalancing Engineering Engagement, Integrity, and Learning Outcomes across an Electronically-Enabled Re-

mediation Hierarchy”

VI. Honors and Awards

A. Awards and Scholarships

Total of 10 Scholastic Recognitions providing \$8,600 (cumulative).

- University Award for Excellence by a Graduate Teaching Assistant at the University of Central Florida, Spring 2016.

Monetary Amount: **\$1,000**

Description: Graduate Teaching Assistants (GTAs) who are nominated from all course Instructors among all of the degree programs across all of the colleges at the University of Central Florida compete for this prestigious award. Excellence in serving as a Graduate Teaching Assistant is demonstrated by evidences such Instructor evaluations, student letters attesting to teaching excellence, lab syllabi and materials created, a sample projects, and instructional innovations developed, introduced, evaluated, and/or published. During each calendar year, a single GTA is selected by Deans and faculty representatives for this recognition of teaching excellence, instructional innovation, and future faculty potential.

- Award for Excellence by a Graduate Teaching Assistant at the College of Engineering and Computer Science of the University of Central Florida, Spring 2016.

Monetary Amount: **\$500**

- Award for Excellence by a Graduate Teaching Assistant at the Department of Electrical and Computer Engineering of the University of Central Florida, Spring 2016.

- Best Poster of the Conference Award Winner at the ACM Great Lake Symposium on VLSI (GLSVLSI’19), May 9-11, 2019.

- Best Student Poster and Second Best Poster Presentation at the Digitally-Mediated Team Learning (DMTL) National Science Foundation (NSF)-Sponsored Workshop, March 31, 2019.

Monetary Amount: **\$100**

- Best Paper of the Session and Best Paper of The Conference Award Nominee at the IEEE International Symposium on Quality Electronic Design (ISQED’17), March 13-15, 2017.

- Frank Hubbard Engineering Endowed Scholarship for the 2019-2020 academic year.

Monetary Amount: **\$1,000**

- David T. and Jane M. Donaldson Memorial Graduate Scholarship for the 2018-2019 academic year.

Monetary Amount: **\$5,000**

- Daniel D. Hammond Engineering Graduate Scholarship for the 2017-2018 academic year.

Monetary Amount: **\$1,000**

- Nominated for “30-Under-30” Award at the University of Central Florida, Fall 2019.

Description: Nominees must demonstrate aspects of Scholarship, Leadership, Generosity, and Resiliency.

B. Orchestration of Research and Travel Grants

Total of 6 Research and Travel Grants providing \$19,950 (cumulative).

- National Science Foundation (NSF) Student Travel Grant to attend the IEEE International Midwest Symposium on Circuits and Systems (MWSCAS), 2019.

Monetary Amount: \$500

- National Science Foundation (NSF) Student Travel Grant to attend the IEEE International Conference on Computer Design (ICCD), 2018.

Monetary Amount: \$750

- Student Travel Grant to attend the Design Automation Conference (DAC) Ph.D. Forum, 2019.

Monetary Amount: \$700

- University of Central Florida Student Government Association Registered Student Organization Conference Participation Grant, 2017, 2018, and 2019.

Monetary Amount: \$14,000

- University of Central Florida College of Graduate Studies Conference Presentation Grant, 2015, 2016, 2017, and 2019.

Monetary Amount: \$2,000

- University of Central Florida Student Government Association Individual Conference Presentation Grant, 2015, 2016, 2017, 2019.

Monetary Amount: \$2,000

C. Technical Paper Reviewer/Referee.....

- Refereed Paper for *IEEE Transactions on Nanotechnology (TNANO)*, Reviewer of Record, 2020.
- Refereed Paper for *ACM Journal of Emerging Technologies in Computing Systems (JETC)*, Reviewer of Record, 2020.
- Refereed Paper for *IEEE Transactions on Circuits and Systems II: Express Briefs (TCAS-II)*, Reviewer of Record, 2016 and 2020.
- Refereed Paper for *IEEE Transactions on Emerging Topics in Computing (TETC)*, Reviewer of Record, 2019.
- Refereed Paper for *IEEE Transactions on Computer Aided Design (TCAD)*, Reviewer of Record, 2019.
- Refereed Paper for *IEEE Transactions on Very Large Integrated Systems (TVLSI)*, Reviewer of Record, 2018 and 2019.
- Refereed Paper for *IEEE Transactions on Computers (TC)*, Reviewer of Record, 2015 and 2018.
- Refereed Paper for *IEEE Access*, Reviewer of Record, 2020.
- Refereed Paper for *IEEE Open Journal of Circuits and Systems (OJCAS)*, Reviewer of Record, 2020.
- Refereed Paper for *International Journal of Electrical Engineering Education (IJEEE)*, Reviewer of Record, 2018.
- Refereed Paper for *American Society of Engineering Education (ASEE)*, Reviewer of Record, 2016, 2017, 2018, and 2019.
- Refereed Paper for *IEEE Frontiers In Education (FIE)*, Reviewer of Record, 2019.
- Refereed Paper for *IEEE SoutheastCon*, Reviewer of Record, 2018.

- Refereed Paper for *ACM Great Lake Symposium on VLSI (GLSVLSI)*, 2020.
- Refereed Paper for *IEEE Computer Society Annual International Symposium on VLSI (ISVLSI)*, 2015, 2016, 2017, and 2018.

D. Professional Service and Activities.....

- Worked closely with my advisor to prepare technical and educational proposals since Fall 2014.
- *Institute of Electrical and Electronics Engineers (IEEE)* Student Member, since Spring 2015.
- *American Society of Engineering Education (ASEE)* Student Member, since Spring 2018.
- Conference Volunteer for *IEEE International Symposium Series on Computational Intelligence (ISSCI)*, Orlando, FL, Fall 2014.
- Invited to serve as the Graduate Student at Large to the *Activity and Service Fee (A&SF) Budget Committee* of the University of Central Florida, Fall 2016.
- Founding President of *Student Laureates of STEM Teaching and Learning (SLSTL)* Registered Student Organization at the University of Central Florida, Summer 2016-Spring 2020.
- Founding President of *Computer Hardware Innovation and Design Association (CHIDA)* Registered Student Organization at the University of Central Florida, Spring 2019-Spring 2020.
- Invited to serve as the Student Representative to the *Teaching Incentive Program (TIP) Faculty Award Committee* of the College of Engineering and Computer Science (CECS), Spring 2016.
- Elected to be the Chairman of *Conference Registration and Travel (CRT) Committee* at the Student Government Association Senate of the University of Central Florida, Spring 2016-Fall 2016.
- Elected to be a Member of *Conference Registration and Travel (CRT) Committee* at the Student Government Association Senate of the University of Central Florida, Fall 2015-Fall 2016.
- Elected as a Senator at *Student Government Association (SGA) Senate* of the University of Central Florida, Fall 2015-Fall 2016.

VII. Workshop Organization, Delivery, and Participation

- Chair of Poster Session at *ACM Great Lakes Symposium on VLSI (GLSVLSI)*, Beijing, China, September 8-11, 2020.
- Co-Organizer, Co-Creator, and Instructor of "Virtualized Active Learning in STEM" Pre-Conference Workshop at *IEEE Frontiers In Education (FIE)*, Cincinnati, Ohio, October 16-19, 2019.
 - Workshop with 21 participants from universities across the world
 - Co-created 6 online modules in Canvas for Teachers
 - 100% respondents agreed workshop motivated them to use technology-enhanced learning in their courses
- Co-Organizer, Co-Creator, and Panel Moderator of "In-Memory Processing for Future Electronics" at *ACM Great Lakes Symposium on VLSI (GLSVLSI)*, Washington, D.C., USA, May 9-11, 2019.
 - Innovated interactive web-based approach for audience participation in panel discussion
 - Transportable to other technical conference venues and lecture formats
- Round Table Participant at the *NSF-sponsored workshop University-Industry Partnerships and The Future of Work at the Human-Technology Frontier*, Orlando, FL, September 24, 2019.

- Panelist, *Digitizing and Remediating STEM Assessments Panel*, University of Central Florida, Orlando, FL, 2016-2018.

VIII. Presentation/Participation in Conferences/Seminars

- Poster presentation at *IEEE FIE*, Cincinnati, Ohio, October 16-19, 2019.
- PowerPoint presentation at *IEEE MWSCAS*, Dallas, Texas, August 4-7, 2019.
- PowerPoint presentation at *IEEE ISVLSI*, Miami, Florida, July 15-17, 2019.
- PowerPoint presentation at *ASEE National*, Tampa, FL, June 15-19, 2019.
- Poster presentation at *ACM DAC Ph.D. Forum*, Las Vegas, Nevada, June 3-6, 2019.
- Poster presentation at *ACM GLSVLSI*, Tysons Corner, Virginia, May 9-11, 2019. **Best Poster of Conference Award Winner.**
- Poster presentation at *Digitally-Mediated Team Learning (DMTL) NSF-Sponsored Workshop, "LMS-Integrated Digitally-Mediated Team Learning Toolset,"* Orlando, Florida, March 31-April 2, 2019. **Best Student Poster Award Winner.**
- PowerPoint presentation at *IEEE ICCD*, Orlando, Florida, October 7-10, 2018.
- Participation in *ASEE National*, Salt Lake City, Utah, June 24-27, 2018.
- PowerPoint presentation at *ASEE National*, Columbus, Ohio, June 25-28, 2017.
- Poster presentation at *IEEE ISCAS*, Baltimore, Maryland, May 28-31, 2017.
- PowerPoint presentation at *ASEE Southeastern*, Tuscaloosa, Alabama, March 13-15, 2016.
- PowerPoint presentation at *IEEE SoutheastCon*, Fort Lauderdale, Florida, April 9-12, 2015.
- Participation in *IEEE ISSCI*, Orlando, Florida, December 9-12, 2014.
- Invited Seminar Talk on Distributed Computing, "Models of Computation and Computational Models Seminar," *ACM Student Chapter*, University of Tehran, Iran, 2012.

IX. Technical and Language Skills

Application Software:

Circuit Schematic Design and Simulation using **MultiSim**; Analog and Digital Circuit Design and Simulation using **HSPICE** and **Cadence Spectre**; Logic Design using **ModelSim**, **Design Compiler**, and **Xilinx ISE/Vivado**; Layout Design using **Cadence Virtuoso** and **Tanner EDA L-Edit**; SoC Design using **Cadence SoC Encounter**; PCB Design using **Altium Designer**; Algorithm Design and Simulation using **MATLAB**; Software Programming using **Visual Studio** and **PyCharm**; Microcontroller Programming using **ATMEL Studio**; Memory Architecture Design and Simulation using **SST Simulator**

Programming Language:

C, C++, Verilog, VHDL, Assembly, Python, MATLAB, Verilog-A

Language:

English (Fluent), Farsi/Persian (Native)

X. Internships and Industry Experience

Summer Intern **May 2012-August 2012**
Iranian Embedded Systems *Tehran, Iran*

- Study of *Texas Instruments Wireless Sensor Networks*
- Design and implementation of an Application Specific Wireless Sensor Network using *Texas Instruments CC2431*
 - Design and implementation of a Graphical User Interface (GUI) for the designed device
- Design and implementation of interfacing embedded systems and Printed Circuit Boards (PCBs) for *Xilinx Virtex5* and *Xilinx Spartan3* FPGAs
- Design and implementation of an Educational General Purpose Board (GPB) for the University of Tehran's Computer Laboratory
 - Design and implementation of a Graphical User Interface (GUI) for the designed board

Technician **2010-2013**
Persian Tronix Co., Tehran, Iran
 Advanced laptop repairing and troubleshooting of both hardware and software

PCB Designer **2010-2014**
University of Tehran, Tehran, Iran
 Designing Printed Circuit Boards (PCBs) for variety of purposes as a freelance work at the University of Tehran

XI. Graduate Courses Completed

EEE5353: Semiconductor Device Modeling and Simulation **Spring 2018**
University of Central Florida

CAP5610: Machine Learning **Fall 2017**
University of Central Florida

EEL6762: Performance Analysis of Computer and Communication Systems **Fall 2017**
University of Central Florida

EEL6938: Special Topics: Modeling and Analysis of Networked Cyber-Physical Systems **Spring 2017**
University of Central Florida

EEL6364: Neuromorphic Computing Circuits **Fall 2016**
University of Central Florida

EEE5390: Full-Custom VLSI Design **Spring 2016**
University of Central Florida

EEL6938: Special Topics: Emerging Device Architecture **Spring 2016**
University of Central Florida

EEE5356: Fabrication of Solid State Devices **Fall 2015**
University of Central Florida

EEE6338: Advanced Topics in Microelectronics **Fall 2015**
University of Central Florida

ECM6308: Current Topics in Parallel Processing **Spring 2015**
University of Central Florida

EEL5722: FPGA Design **Fall 2014**
University of Central Florida

EEE5378: CMOS Analog and Digital Circuit Design
University of Central Florida

Fall 2014