Sina Parsnejad

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My design Portfolio:

Personal Statement

Electrical engineering PhD student seeking to engage in and commercialize emerging fields of research such as: high-precision instrumentation, human augmentation, neural interfaces, low-power data converters, AR/VR environments, flexible electronics, smart sensors, etc. through conducting research in academic and industrial environments.

Skills

IC design using Cadence and Mentor Graphics IC design suit, MATLAB, C/C++, Python, Xilinx Vivado, ARM and AVR cores, machine learning, embedded system design, PCB design, Verilog, SentarusWB, Keil MDK, STEM education. Proficient in English, Persian (Farsi), Turkish, Azeri

Education

Michigan State University, PhD of Electrical Engineering, East Lansing, Michigan (2022)
• Supervisor: Professor Andrew J. Mason • July 2017 – May 2022 • Cumulative GPA: 3.87/4
• Thesis subject: Human Augmentation using unobtrusive rapid real-time machine to human communication

Michigan State University, M.S. of Electrical Engineering,East Lansing, Michigan (2017)
• Supervisor: Professor Andrew J. Mason • September 2014 – July 2017 • Cumulative GPA: 3.87/4
•Thesis subject: Power-area efficient rapid-response CMOS frontend for high-throughput ion-channel sensor array microsystems

Boğaziçi University, M.S. of Electrical Engineering Istanbul, Turkey (2014)
• Supervisor: Professor Gunhan Dundar • January 2012 – July 2014 • Cumulative GPA: 3.75/4
•Thesis subject: Design and implementation of ultra-low power consuming Sigma-Delta data converters

Urmia University, B.S. of Electrical Engineering, Urmia, W Azerbaijan, Iran (2011)
•Supervisor: Professor Javad Nourinia • September 2007 – August 2011 • Cumulative GPA: 3.64/4
•Thesis subject: Design and implementation of" Infrared data transceiver module"

Honors:

- Michigan State University Spartan Innovations Venture Fellowship program May 2018 – June 2019
- Ranked 2nd in cumulative GPA among all 80 fellow graduates in class of 2006
- Performed Invited Presentation at IEEE Colombian BioCas Conference 2020

Experience

Research assistant at *HATlab*, *Michigan State University* (2014–Present).
- Develop a peripheral nerve stimulation device for human augmentation
- Perform human trials to explore cognitive effects of human augmentation techniques
- Develop a wide dynamic range multi-channel portable electrochemical instrument for in-field measurement
- Develop a high precision readout interface for arrays of nano-pore for single molecule sensing using ON 0.6µm
- Develop a feasible brain-machine interface through electrotactile stimulation

Research assistant at *Beta* laboratory, *Boğaziçi University* (2012–2014).
- Research, design and fabrication of 3 distinct chips in UMC 180nm technology using Mentor IC design suit
- Developed discrete time, continuous time and hybrid sigma delta ADCs
- Proposed a design with precision higher than 85dB with a power consumption of less than 5µW in 25 KHz BW
- Lead a team of eight graduate students and coordinated individual VLSI design groups
- Designed and implemented a digital watch using Magic IC design package in UMC 0.5µm

Venture fellow at Spartan Innovation Center, Lansing, MI (2018-2019)
- Market research and business plan development for MSU startup company, Magplasma Inc.

Chief Technical Officer at Spinning Speakers & Superconductors education, Lansing, MI (2017-2018)
- Designed and prototyped marketable products for initial marketing phase
- Design and implement low-cost STEM education tools for low-income school districts

Teaching assistant (2019–2022)
- ECE 345: Electronic instrumentation and systems:
- ECE 331: Microprocessors and Digital Systems:
- Performed lectures, designed and produced educational content. Organized tutorials, gave exams, graded reports and lectured on Cadence Virtuosos, Keil MDK with ARM microprocessors, Hspice, etc.