

Javad Sohankar

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RESEARCH INTERESTS Machine Learning, Security, Biometrics, Information Theory, Data Compression and Coding, Signal Processing, High Performance Computing.

SKILLS ♦ **Programming Languages:** Proficient in C, C++, Java, Matlab; Familiar with OpenCL.
♦ **Signal/Image Processing and Machine Learning Tools:** Experienced in Matlab

EDUCATION ♦ **Arizona State University (ASU)**, Tempe, AZ.
Ph.D. in Computer Engineering, expected graduation year: 2019.
♦ **Sharif University of Technology**, Tehran, Iran.
Diploma [B.Sc.] in Computer Engineering, Aug 2013.
Thesis Title: *Robustness analysis of digital image watermarking against geometric attacks.*
♦ **Scholarships**

- ASU Scholarship (Sep 2014 – present)
- ASU CIDSE Research Grant Award (\$2000) (May 2016)

WORK EXPERIENCE ♦ **Research Assistant**, Arizona State University (Aug 2014 – present)
IMPACT lab, Directed by Prof Sandeep Gupta; Published Four Papers in Machine Learning and Security.
♦ **Teaching Assistant**, Arizona State University (Aug 2014 – present)
Courses: Data Structures and Algorithms, Principles of Programming, Operating Systems.
♦ **Teaching Assistant**, Sharif University of Technology, Iran (Aug 2011 – 2013)
Courses: Introduction to Programming, Advanced Programming, Discrete Structures, Data Structures and Algorithms
♦ **Internship**, APA (Academic Protection and Awareness) Center of Isfahan University of Technology, Iran (Summer 2013)
Published a technical white paper on detection/prevention of XSS (Cross-site Scripting) attacks against websites, for the Computer Emergency Response Team (CERT).

RESEARCH PROJECTS *Current Research:* Machine Learning Security and Brain Based Access Control Systems.
Advisor: Sandeep Gupta.

- ♦ **Theoretical Analysis of Machine Learning Security against Tampering Attacks.** Formalization and evaluation of a theoretical framework for analyzing the security of Neural Network based systems against tampering attack; providing security guarantees by analytically calculating the number of security bits of the system. Paper Published.
- ♦ **Pervasive Mobile Brain Based Access Control System.** Development and analysis (accuracy, latency, energy, usability, robustness) of a novel mobile brain based security system for authentication and identification of 10 subjects. Paper Published.
- ♦ **IoT Optimization for Brain Mobile Interface Applications** Development and trade-off analysis (Accuracy, Latency, Energy, Usability) of four different architectures of a novel interactive mobile movie application, Neuro-Movie (nMovie), based on nervousness level derived from user brain signals. Paper Published.

- ◇ **An Autonomous Driver Safety Application in Aware Cities** Development and analysis of an autonomous transportation application, which estimates mental fatigue of a driver using brain sensors, predicts collision, and issues real-time feedback. Paper Published.
- ◇ **High Performance Computing of Machine Learning Based Predictive Model on Mobile Platforms.** The first Implementation of ANFIS predictive model for brain signals on mobile phone (CPU/GPU) and desktop (CPU) in JAVA and C, and performance evaluation of these three implementation. Publication Submitted.

PUBLICATION ◇ *E-BIAS: A Pervasive EEG-Based Identification and Authentication System.* J. Sohankar, K. Sadeghi, A. Banerjee, and S. Gupta. 11th ACM Symposium on QoS and Security for Wireless and Mobile Networks (MSWiM), 2015.

◇ *SafeDrive: An Autonomous Driver Safety Application in Aware Cities.* K. Sadeghi, A. Banerjee, J. Sohankar, and S. K.S. Gupta. 2016 IEEE International Conference on Pervasive Computing and Communication Workshops (PerCom Workshops), 2016.

◇ *Optimization of Brain Mobile Interface Applications Using IoT.*, K. Sadeghi, A. Banerjee, J. Sohankar, and S. K.S. Gupta. 23rd annual IEEE International Conference on High Performance Computing, Data, and Analytics (HIPC), 2016.

◇ *Toward Parametric Security Analysis of Machine Learning based Cyber Forensic Biometric Systems.* K. Sadeghi, A. Banerjee, J. Sohankar, and S. K.S. Gupta. 15th IEEE International Conference on Machine Learning and Applications (ICMLA), 2016.

REFERENCE Available on request.