

# Adel Ahmadyan

(217) 722 2590 – ahmadyan@gmail.com – www.adel.ac

## Summary

Extensive and diverse machine learning/software development/mathematical modeling experience (C++/Python/Java) with system/hardware background. Research interest in computer vision and multiview geometry with focus on optimization. Expert in optimization and randomized algorithms and nonconvex optimization. Wrote a Ph.D. thesis in random tree sampling algorithms for testing and optimization of nonlinear systems.

Master in Computer Architecture. I can develop high-performance and memory efficient software. Passionate about performance, scalability and solving complex problems.

## RESEARCH INTEREST

- Computer Vision, Deep Learning, Machine Learning, Optimization

## EDUCATION

- University of Illinois at Urbana-Champaign (UIUC), 2011–2016
  - Ph.D. in Computer Engineering advised by Prof. Vasudevan
  - Thesis: *Simulation, optimization, and validation of nonlinear systems*
- Sharif University of Technology, 2005–2011
  - M.Sc. in Computer Engineering
  - B.Sc. in Computer Engineering

## WORK EXPERIENCE

- **Snap, Inc. Research Engineer –Computer Vision** 2017–
- **Personify, Intern,** Summer-2015  
Developed the components for real-time capture (Intel RealSense) and 3D rendering of human subjects in a virtual-reality environment (Unreal engine) involved computer vision algorithms including user extraction and feature detection.
- **Ansys [Nexxim team], Intern,** Summer-2014  
Developed fully-modular regression testing software (using Python, SQLite, SQLAlchemy, MATLAB) to test Nexxim ODE solver for continuous integration, improving test efficiency by 10-fold.
- **Behraves Inc, System Engineer,** 2011  
Managed and shipped a full-stack high-speed network-based Data Acquisition System for real-time capturing, monitoring and anomaly detection in data streams that generated 30% of company's revenue.
- **BSI Financial group, System Engineer,** 2011  
Designed and Implemented a scalable and highly-available virtualization platform (using vSphere) for bank's infrastructure.
- **SystemGroup [R&D department], Software Engineer,** 2008–2009  
Developed code (JavaEE, jBPM, Hibernate, JavaFaces) that handled the business logic of the software.

## SKILLS

- **Languages:** C++, C, Java, Python, MATLAB, R, Verilog, VHDL, SystemC, Verilog-A
- **Learning:** Tensorflow, Scikit, numpy, Pandas, Theano, Keras
- **Vision:** OpenCV, dlib, Eigen, Blas
- **Database:** MS SQL server, PostgreSQL, SQLite, SQLAlchemy, Spring, Hibernate
- **System:** Amazon AWS, VmWare vSphere, Microsoft Azure, Apache Hadoop, Spark,
- **Process:** Scrum, Agile, Waterfall, Git, Kanban, Jira, Continuous Integration
- **OS:** Linux, Mac OS-X, Windows, Shell-scripting

## PUBLICATIONS

- S.N.Ahmadyan, S. Natarajan, S.Vasudevan, A Novel Test Compression Algorithm for Analog Circuits to Decrease Production Costs, Elsevier VLSI integration journal, 2017.
- S. N. Ahmadyan, S. R. Etesami, H. Vincent Poor, A Random Tree Search Algorithm for Nash Equilibrium in Capacitated Selfish Replication Games, 55th IEEE Conference on Decision and Control, Las Vegas, 2016.
- S.N.Ahmadyan, S. Vasudevan, *Duplex: Simultaneous Parameter-Performance Exploration for Optimizing Analog Circuits*, International Conference On Computer Aided Design, Austin, 2016.
- S.N.Ahmadyan, S. Natarajan, S.Vasudevan, *Every test makes a difference: Compressing analog tests to decrease production costs*, Asian-Pacific Design Automation Conference, 2016.
- S.N.Ahmadyan, S.Vasudevan, *Automated transient input stimuli generation for analog circuits*, IEEE Transaction on Computer Aided Design, 2015.
- S.N.Ahmadyan, S.Vasudevan, S. Natarajan, C. Gu, E. Chiprout, *Fast eye diagram analysis for high-speed CMOS circuits*, Design Automation and Test in Europe, (**Best paper nomination**), 2015.
- J. Asok Kumar, S.N.Ahmadyan, S.Vasudevan, *Efficient statistical model checking of hardware circuits with multiple failure regions*, IEEE Transaction on Computer Aided Design, 2014.
- S.N.Ahmadyan, S.Vasudevan, *Reachability analysis of nonlinear analog circuits through iterative reachable set reduction*, Design, Automation and Test in Europe (DATE), 2013.
- S.N.Ahmadyan, J. Asok Kumar, S.Vasudevan, *Runtime verification of nonlinear analog circuits using incremental time-augmented RRT algorithm*, Design, Automation and Test in Europe (DATE), 2013.
- S.N.Ahmadyan, J. Asok Kumar, S.Vasudevan, *Goal-oriented stimulus generation for analog circuits*, in Proceedings of the 49th Design Automation Conference (DAC), 2012.
- S.N.Ahmadyan, M. Fazeli, N. Farhadi, S.G. Miremadi, *Value-aware low-power register file architecture*, in Proceedings of the 16th symposium on Computer Architecture and Digital Systems (CADS), 2012. (**Best paper award**)
- M. Fazeli, S.N. Ahmadyan, S.G. Miremadi, H. Asadi, M.B. Tahoori, *Soft error rate estimation of digital circuits in the presence of multiple event transients (METs)*, Design, Automation and Test in Europe (DATE), Grenoble, France, 2011.
- S.N.Ahmadyan, S.G. Miremadi, *Fault injection in a mixed-signal environment using behavioral fault modeling in Verilog-A*, in Proceedings of IEEE Behavioral Modeling and Simulation Conference (BMAS), San Diego, USA, 2010.
- M. Fazeli, S.G. Miremadi, H. Asadi, S.N. Ahmadyan, *A fast and accurate multi-cycle soft error rate estimation approach to resilient embedded systems design*, in Proceedings of the 40th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), Chicago, USA, 2010.
- M. Fazeli, S.N.Ahmadyan, S.G. Miremadi, *A low energy soft error-tolerant architecture for the register file in embedded processors*, The 11th IEEE High Assurance Systems Engineering Symposium, China, 2008.

## AWARDS

- DATE-2015 best paper nomination
- CADS-2012 best paper award
- 2013 Intel fellowship award
- 2005 Kharazmi scholarship award, Honorary admission to Sharif
- Ranked 8th national graduate entrance exam
- 2010 Sharif hardware design competition: Best design award, 1st place for implementing a real-time video processing pipeline in FPGA.

## INTERESTS

- Hiking & backpacking, Photography ([adel.ac/photography](http://adel.ac/photography)), Violin
- **Languages:** English, Farsi, Mazandarani [MZN]