Kourosh Hakhamaneshi

PhD student, EECS, UC Berkeley

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Education

2017-2022 (Expected) **PhD student in Electrical Engineering and Computer Science**, *University of California Berkeley*, Major: Artificial Intelligence (AI), IC Design.
Advisor(s): Vladimir Stojanovic, Pieter Abeel

May 2019 **Master of Science**, *Electrical Engineering and Computer Science*, University of California Berkeley, Advisor(s): Vladimir Stojanovic, Pieter Abeel.

2012-2017 **Bachelor of Science, Major: Electrical Engineering, Minor: Economics**, *Sharif University of Technology*, Tehran, Iran, Overall GPA: *19.27/20 (3.98/4)*.

Publications

Nov 2019 **BagNet: Berkeley Analog Generator with Layout Optimizer Boosted with Deep Neural Networks**, *ICCAD '19, Nov 4-7, 2019, Denver, CO, USA*, Preprint.

June 2019 **Late Breaking Results: Analog Circuit Generator based on Deep Neural Network enhanced Combinatorial Optimization**, *DAC '19, June 2–6, 2019, Las Vegas, NV, USA*.

March 2019 **Ultra Low-Power System for Remote ECG Monitoring**, *Link*.

Research Experience and Projects

Since F17' **Research Assistant**, *BWRC, UC Berkeley*,
AI driven Circuit Design Methodologies. This work explores new algorithms for analog circuit design automation with no humans in the loop. The main challenge is considering post-layout effects and hence sample efficient learning. This research area requires understanding of modern deep learning algorithms, Reinforcement learning, Generative models, etc. as well as expertise in Integrated Circuit Design.
Advisor(s): Vladimir Stojanovic, Pieter Abeel

Undergrad research projects

Summer 2016 **Design and Simulation of an 8 bit, 10 MSample/Sec, Differential SAR ADC**, *Under supervision of Prof. M. Sharif Bakhtiar.*

Summer 2015 - present **B.Sc Thesis: Implementation of a Low Power Heart Rate Monitoring System**, *It can interface with user's mobile phone through BLE, using TI BLE IC CC2650; All of the analog circuit was designed and implemented by ourselves; and an android application was presented to show the signal*, Under supervision of Prof. *A. Fotowat Ahmady.*

Fall 2015 **Oscillator Phase Noise Improvement Using ISF Manipulation, Colpitts and Cross-coupled Topology**, *Under Supervision of Prof. M. Sharif Bakhtiar.*

Work Experience

2019 **Internship at Bluecheetah Analog Inc.**, Design Engineer. My duties include developing the infrastructure; writing, designing and verifying circuit generators and methodologies in BAG (Berkeley Analog Generator).

Summer 2016 **Part time R&D Engineer, Kavoshcom Asia**, *Tehran, Iran*, on the project of Low Power Heart Rate Monitoring System to implement some industrial production refinements, Under supervision of Prof. Fotowat Ahmady.

Summer 2015 **R&D Engineer Intern, Kavoshcom Asia**, *Tehran, Iran*, Under supervision of Prof. Fotowat Ahmady.

Teaching Experiences (Sharif Univ. of Tech.)

Spring 2015 **Analog Electronics**, *Workshop, Tutorial and Lab Assistant*, Prof. M. Sharif Bakhtiar.

Spring 2015 **Digital Circuits and Pulse**, *Grader*, Prof. Bagheri.

Fall 2015 **Principle of Electronics**, *Workshop, Tutorial and Lab Assistant*, Prof. M. Sharif Bakhtiar.

Fall 2015 **Analog Electronics**, *Project Designer ("Low Dropout Voltage Regulator" Design)*, Prof. A. Fotowat Ahmady.

Spring 2015 **Signal and Systems**, *Matlab Workshop Assistant and Grader*, Prof. Karbalaee Aghajan.

Spring 2015 **Principle of Electronics**, *Lab Assistant*, Prof. Farkharzadeh.

Fall 2014 **Circuit Theory**, *Grader*, Prof. E. Fatemizadeh.

Skills and course work

Course Work

Deep Unsupervised Learning, Deep Reinforcement Learning, Efficient Algorithms (CS170), Data structures (CS61B), Introduction to AI (CS188), Intro to ML (CS289), Analog IC (EE240A), Advanced Analog IC (EE240B), Digital IC (EECS251LA), Advanced Digital IC (EE241).

Frameworks

Python, Tensorflow, Pytorch, Verilog.