Utku Noyan

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Education

University Of Maryland, College Park — *Maryland, United States*
Ph.D in Electrical & Computer Engineering — *Aug. 2021 - May 2026(Expected)*
- Graduate Teaching Assistant w/ Dean's Fellowship
- GPA 4.0/4.0

Koc University — *Istanbul, Turkey*
B.S. in Electrical & Electronics Engineering - Computer Engineering(Double Major) — *Sep. 2016 - Jan. 2021*
- Ranked 516st, National University Entrance Examination (top 0.1% in 2.5 million)
- Full-merit scholarship recipient for education with High Honor Award (10 semesters)
- GPA 3.78/4.0

Publications

IEEE International Symposium on Circuits & Systems,
2022 Deep Neural Network Based Cell Segmentation for Lab-on-CMOS Systems using Realtime Microscopy — *Austin, Texas*
N.Renegar, U.Noyan, P.Abshire

44th IEEE Engineering in Medicine and Biology Society ,
2022 A proof-of-concept real-time processing to characterize vascular flow(Submitted) — *Glasgow, Scotland*
S.Shah, H.Toreyin, U.Noyan, Y.J.Lee

Research Experience

Shah Lab, Assistant Professor Sahil Shah — *University Of Maryland*
Graduate Research Assistant — *Sep. 2021 -*
- Developing circuits and system that can efficiently process and analyze biological signals in real-time.
- Working on the IC design of biochemical ISFET array for the Lab-on-Chip applications.
- Submitted a conference paper to 40th IEEE EMBC'22 to present a cost-effective, reliable, and wearable vascular flow monitoring system to compute real-time blood flow using unique electrical bio-impedance hardware measurements.

Integrated Biomorphic Information System Lab, Professor Pamela Abshire — *University Of Maryland*
Graduate Research Assistant — *Sep. 2021 -*
- Worked on various Deep Neural Network based Cell Segmentation methods for Lab-on-CMOS Systems using realtime microscopy and conference paper has been accepted.
- Now, extending this work on a journal paper by adding instance segmentation, cell tracking method via various supervised, semi-supervised methods to Lab-on-CMOS devices.

Wireless Networks Lab, Professor Sinem Coleri — *Koc University, Turkey*
Undergraduate Research Assistant — *Sep. 2019 - Jan. 2021*
- Conducted research project on Communication-based Vehicle Localization methods for collision avoidance and platooning.
- Submitted a journal paper to illustrate the potential of VLC-based localization methods in far-reaching real automotive use cases simulation study with acquiring theoretical bounds of the designed novel method through this research effort.

BAYKAR Defence, Software Engineering Department — *Istanbul, Turkey*
Artificial Intelligence Intern — *June. 2019 - Sep. 2019*
- Developed path planning algorithms that enable UAV to make safe landing using data of elevation, flat land, and zone characteristics that can land.
- Implemented UAV maneuver library by taking into account kinematic properties of aircraft.

ASELSAN INC., Communication Systems Division — *Ankara, Turkey*
Communication System Engineering Intern — *June. 2019 - July. 2019*
- Conducted narrow band frequencies using Radio Mobile and on broadband frequencies on Atoll to create city communication coverage map using antennas.
- Designed graph search to provide optimized site connections.

Twin Science Robotics — *Istanbul, Turkey*
Research & Development Intern — *Nov. 2017 - June. 2019*
- Designed PCB layouts of 3 new electronic modules(pulse,delay,piano) on Altium Designer.

Projects

Circuit Design Of Energy Efficient In-Memory Computing — *University Of Maryland*
Embedded Machine Learning Term Project — *Oct. 2021, December 2021*
- Designed an energy efficient embedded circuit architecture (e.g. SRAM, DRAM, RRAM) and presented its efficiency with a use case of convolutional neural network on MNIST database.

Design & Analysis Of Neural Spike Detection/Sorting Circuit — *University Of Maryland*
Integrated Circuit Design Term Project — *Oct. 2021, December 2021*
- Designed a custom VLSI chip that can recognize which neurons are triggered utilizing various analog voltage signals from a neuronal recording device (e.g. neural prosthesis).

Brain Tumour Segmentation *Koc University*

Computer Vision With Deep Learning Term Project, Medical Image Analysis Term Project *Nov. 2020, May 2020*

- Designed improved deep learning model for brain tumour segmentation such as nn-Unet, Vnet with pre- and post-processing steps. Then, to detect' age of tumour Variational Autoencoders is used.

Teaching Experience

Mixed Signal VLSI Design *University of Maryland*

Graduate Teaching Assistant *Jan. 2022 - May 2022*

- Leading lab sections to design of extensive scale integrated (VLSI) circuits throughout the CAD tools.

Electronic Circuits Design Laboratory

Graduate Teaching Assistant *Aug. 2021 - Dec. 2021*

- Lead lab sections to analyze and implement the multi-device such as transistors, diodes, operational amplifiers circuits.

Introduction to Programming Course *Koc University*

Undergraduate Teaching Assistant *Sep. 2018 - January. 2019*

- Prepared homework assignments and conducted programming sections for Java course using Stanford University libraries.

Skills

Programming Python, JAVA, C/C++, R, VHDL, VLSI, Verilog, React, LaTeX

Tools Circuit Design(Pspice, Altium Designer, Cadence), Database Management(MongoDB), Communication(ns-3, RadioMobile, Atoll)

Libraries Pytorch, Tensorflow, sci-kit

EXTRACURRICULAR (LEADERSHIP & SERVICE)

Young Guru Academy *Istanbul, Turkey*

Volunteer *Nov. 2017 - August 2021*

- Selected YGA Leadership Program as one of fifty volunteers among the fifty thousand high school and university applicants.
- Worked collaboratively with "YGA Dream Partners" consisting of people of science,academicians, and senior executives among whom there are Prof. Aziz Sancar, Prof. Mehmet Toner.
- Worked over 2500+ hours of volunteering on YGA social innovation project of Science to Anatolia which was deemed worthy of Peer Awards for Excellence.
- Went to 10+ different cities of Anatolia and gave 30+ science sessions to children with aim of to give love and enjoy science with children.
- Led the YGA volunteers' team to design Artificial Intelligence STEAM Kits for K12 children in collaboration with FORD company engineers.