
Ömer Faruk ÖZBEK

Born: 11.11.1996
Tel.: +90 505 838 98 36
Email: ozbeko15@itu.edu.tr
omer.ozbek.faruk@gmail.com



Work Experience

- 2020 Sep – EW Systems Engineer, ASELSAN**
- 2018 Jun – 2020 Sep Trainee, R&D Engineer, Arçelik A.Ş**
I have worked at R&D Directorate, Test and Approval Department, Test Design Team. I have participated in the development of new automation tools, as a hardware designer.

Education

- 2021 – M.Sc. Electronics Engineering, Istanbul Technical University**
- 2016 – 2020 B.Sc. Electronics and Communication Engineering, Istanbul Technical University**
Concentration: Analog/Digital Integrated Circuit Design, Semiconductor Devices
Thesis: Ultra-Low-Voltage Microcontroller and PMIC Design for BioImplant Applications
Supervisor: Assoc. Prof. Tufan Coşkun KARALAR
GPA: 3.42/4.00
- 2017 – 2018 Electronics and Electrical Engineering, Exchange Student, Aalto University**
Two semesters Erasmus exchange.
- 2015 – 2016 School of Foreign Languages, Istanbul Technical University**
One semester English Preparatory
Proficiency Exam Result: 87/100 (B2 Level)
- 2010 – 2014 Math and Science, Sakarya Science High School**
GPA: 87.32/100

Projects

- 2020 Aug Ultra-Low-Voltage Microcontroller and PMIC Design, Istanbul Technical University**
32bit ARM processor has been characterized for 500mV and synthesized in TSMC 65nm CMOS process. Also, in order to supply power to this processor, a PMIC has been developed. In PMIC, some analog blocks such as LDO, Cross-Coupled Charge Pump, Bandgap Reference, Current-Starved Ring Oscillator have been designed.
- 2019 Aug Home Appliances' Main Boards Tests Automation System, Arçelik A.Ş**
I took part as a leader in this project. The goal of this project was detecting the bugs in the microcontroller's software and the hardware design of the main boards. To achieve this, a comprehensive electronic card has been designed. Altium Designer has been used for PCB designing and a generic graphical user interface has been developed.

-
- 2019 May RiSC-16 Design, *Istanbul Technical University***
Using Verilog HDL, RiSC-16 Core has been implemented. The core has been tested on Artix-7 FPGA with greatest common divisor program, implement with RiSC-16 Instruction Set, running on it. The core also has been tested with Cadence Genus, Cadence Innovus for different CMOS process technologies. A paper has been written to apply for ITU GSTL İşlemci Tasarımı Çalıştayı 2019.
- 2019 Apr LDO and Digital Gates Layout for Bioimplant Chips, *Istanbul Technical University***
In a project that was held by İTÜ VLSI Labs, which name is "Advanced Power Management Integrated Circuit Design For High Efficiency Micro Implant Systems", some circuit block's layouts have been implemented. This project has been supported by TUBITAK(The Scientific and Research Council of Turkey). In this project 40nm Low-Power CMOS process has been used. Also, Cadence tools have been used for all layout and simulations.
- 2019 Feb End User Tests Automation System, *Arçelik A.Ş***
The goal of this project is to simulate touch screen buttons of the display in white goods. The buttons are capacitive touch sensors. In order to simulate this capacitive effect, an electronic board has been designed. Altium Designer has been used for PCB design.
- 2018 Aug Dish Washer Propeller RPM Measurement System, *Arçelik A.Ş***
The goal of this project is to be able to measure RPM in the wet place(inside the machine) and send the data wirelessly. In order to overcome the wet place issue, Magnetic Hall Effect sensor has been used for collecting data. The structure of the machine creates a Faraday Cage, that's why Bluetooth has been used for sending data outside wirelessly. I have led this project and for designing the PCB, Altium Designer has been used.
- 2018 Jul Refrigerator Compressors Test Automation System, *Arçelik A.Ş***
Electrical grid does not have the same quality in every country. That's why, by using different supply frequencies some grid tests were running. In this project, an automation system have been developed. In the setup, there is a signal generator and a relay control circuit for controlling the supply voltage of compressor. In normal case the technicians were spending one week for testing a single refrigerator. With the help of this developed system, a single thing that the technician needs to do is clicking a button. Also, a graphical user interface have been developed by using C# programming language to check the results.
- 2018 Feb Miller-Compensated OpAmp Design, *Aalto University***
A Miller-compansated operational amplifier has been designed based on given specifications. After hand calculations, the preliminary design has been evaluated by simulations and revised accordingly. Finally, the revised design has been layouted and re-evaluated. Cadence tools have been used for all simulations, and layout. 45nm CMOS process has been used.
- 2017 Nov Biosignal Processing, *Aalto University***
Using TrueSense Exploration Kit, different biosignals such as EEG, EMG and ECG have been captured and processed in MATLAB. Different filters have been used to remove the noise and interference from the data. Also, different artifacts and problems in human electro-physiological recording have been described. Some system developments for improving the hardware and software design of TrueSense system have been proposed.

Language Skills

English : Upper-Intermediate
German : Elementary
Finnish : Elementary
Turkish : Native language

Technical Skills

Cadence
LTSpice
Altium Designer
MATLAB
Wolfram Mathematica
Verilog
C /C++/ C# Programming
Python
Arduino, ESP32 & Raspberry Pi
PLECS
L^AT_EX

Awards

2016 – 2019 – TEV(Turkish Educational Foundation) Scholarship

Exam Results

2020 July – YDS / English: 88.75
2019 November – ALES: 89.45

Society Memberships

Since 2015 – ITU / IEEE Student Branch
Since 2016 – TEV(Turkish Educational Foundation)

Interests

Basketball, playing guitar and singing, amateur astronomy, plane spotting, brain and neurology, hiking.