



Bahadır Dönmez

Master's Student · Quantum Engineering

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PROFILE - SUMMARY

I am extremely passionate about science & engineering with special interest in **Electronics, Information Processing, Quantum Computing** and **Quantum Devices**. In addition to being very enthusiastic and hardworking in scientific domain, I enjoy participating in various extracurricular activities. I would like to contribute to my future institution not only in scientific projects with my academic skills, but also with my leadership, communication and networking experiences.

EDUCATION

Sep. 2019 - Present
Zürich, Switzerland

ETH Zurich

MSc. in Quantum Engineering

- **Courses taken mainly on:** Quantum Information Processing, Qiskit, FPGAs, Superconducting Devices, Quantum Optics

Sep. 2014 - Jun. 2019
Istanbul, Turkey

Bogazici University

BSc. in Electrical and Electronics Engineering, BSc. in Physics (Double Major)

- **Overall GPA:** 3.70/4.00 | **Honors:** High Honors, Rectorate Award
- **Courses taken mainly on:** CMOS VLSI, Signals Processing, Numerical Methods, Microelectronic Circuits, Solid State Physics, Experimental Physics

Apr. 2017 - Sep. 2017
Munich, Germany

Technical University of Munich

Erasmus Program in Electrical Engineering (with Full Scholarship)

- **Courses taken mainly on:** Operational Amplifiers, Control Systems, Nanoelectronics, Quantum Mechanics

Sep. 2009 - Jun. 2014
Istanbul, Turkey

Istanbul Erkek High School (Istanbuler Gymnasium)

Dual Diploma of Turkish and German Education Systems in Mathematics and Sciences Track

- **Turkish Diploma Grade:** 95.24/100 | **German Abitur Grade:** 1.4/6.0

EXPERIENCE & EMPLOYMENT

Sep. 2020 - Dec. 2020
Zürich, Switzerland

ETH Zurich, Integrated Systems Laboratory

Teaching Assistant

Instructors: Dr. Frank Kagan Gürkaynak & Prof. Luca Benini | **Supervisor:** Gianna Paulin

- Assisting students with use of Xilinx Vivado, Zybo Z7 FPGA Board and Synopsys Synthesis during the lab hours.

Sep. 2020 - Dec. 2020
Zürich, Switzerland

ETH Zurich, Quantum Device Lab

Semester Thesis Student

Principal Investigator: Prof. Andreas Wallraff | **Supervisor:** François Swiadek

- Developed an integrated design framework in Mathematica for the readout circuitry of the quantum processors.

Dec. 2019 - Sep. 2020
Zürich, Switzerland

Research Assistant

Principal Investigator: Prof. Andreas Wallraff | **Supervisor:** Dr. Philipp Kurpiers, Josua Schär & Simon Storz

- Created CAD models and drawings for a new light-tight and bottom accessible 8-port sample holder using Inventor.
- Designed the 10mK temperature plate cabling compatible with the new sample holder and side port of the cryostat.

Jun. 2019 - Oct. 2019
Zürich, Switzerland

Summer Intern

Principal Investigator: Prof. Andreas Wallraff | **Supervisor:** Dr. Sebastian Krinner

- Used KiCAD to design PCB schematics and layout of a bi-directional current source of a superconducting RF switch.
- Developed C based Microcontroller firmware for PIC18F24J50 and Python based control software for the host PC.
- Implemented analysis functions in Mathematica for Character Randomized Benchmarking of two-qubit gates.

Jul. 2018 - Sep. 2018
Zürich, Switzerland

Summer Intern

Principal Investigator: Prof. Andreas Wallraff | **Supervisor:** Dr. Abdulkadir Akin

- Developed arbitrary waveform generator for low latency quantum feedback system using Virtex-7 FPGA.
- Created functions in Visual Studio to program the AWG, converted them to DLL's to build a LabVIEW interface.

Sep. 2016 - Jun. 2019
Istanbul, Turkey

Bogazici University, Department of Physics

Teaching Assistant

Held weekly sessions to solve the problem sets and review the material covered in lectures

- Introductory Mechanics and Thermodynamics, Modern Physics, Classical Mechanics, Electricity and Magnetism

Sep. 2017 - May. 2019
Istanbul, Turkey

Bogazici University, Micro Electro Mechanical Systems Lab

Undergraduate Research Assistant

Principal Investigator: Prof. Şenol Mutlu **Supervisor:** Ozan Ertop & Zahid Sağıroğlu

- Fabricated water-gated field effect transistor through photo-lithography using CVD deposited graphene on SOI.
- Developed a VB Script to program Impedance Analyzer and automate impedance measurements using macros.
- Analyzed the impedance data with MATLAB to extract the RC time constant and solution conductivity.

EXTRACURRICULAR ACITIVITES & VOLUNTEERING

Nov. 2019 - Dec. 2020
Zürich, Switzerland

TURQUIA 1912 - Société d'Étudiants Turcs

Secretary

- Maintained membership forms and prepared official documents of the society.
- Designed social media graphics and the new web page: turquia1912.org.
- Co-organized a reception to celebrate Commemoration of Atatürk, Youth and Sports Day.

Jun. 2018 - Jun. 2019
Istanbul, Turkey

Bogazici University Student Council

President of Engineering Faculty and Electrical & Electronics Engineering Department

- Attended the Faculty Board meetings held biweekly and represented 2200 engineering students.
- Co-organized Graduation Ball and After Party 2019 for over 700 attendees.
- **Projects implemented:** Grad School Consultancy, Quick Start Guide to Department, Career Development Program

Nov. 2017 - Jun. 2018
Istanbul, Turkey

Vice President of Electrical & Electronics Engineering Department

- **Projects implemented:** Undergraduate Research Program, Academy Seminars Video Series, Mentorship Program

May. 2015 - Feb. 2016
Istanbul, Turkey

Bogazici University IEEE Student Branch

Power & Energy Society Founder & Chair

- **Conference organized and led:** Bogazici Energy Summit (**Received IBM Students for a Smarter Planet Award**)

PUBLICATION

2019 **“Improved Gain and Bandwidth of Water-Gated Field Effect Transistor (WG-FET) Circuits Using Solutions with Higher Ion Concentration”**, O. Ertop, **B. Donmez**, S. Mutlu, 2019 20th International Conference on Solid-State Sensors, Actuators and Microsystems & Eurosensors XXXIII (TRANSDUCERS & EUROSENSORS XXXIII), Berlin, Germany, 2019, pp. 1377-1380.

HONORS, SCHOLARSHIPS & TEST SCORES

2019	Bogazici University, Rectorate Award (Given to one student among 2000 graduating students)	Istanbul, Turkey
2019	Bogazici University, High Honors	Istanbul, Turkey
2018	TOEFL IBT , 109 / 120	Istanbul, Turkey
2018	GRE General, Q: 170 / 170 V: 155 / 170 AW: 3.5 / 6	Istanbul, Turkey
2016	The Scientific and Technological Research Council of Turkey , Undergraduate Scholarship	Istanbul, Turkey
2014	Turkish University Admission Exam , Ranked 88th among 2.1 million students	Istanbul, Turkey

SKILLS

Languages

Turkish	Native
English	Fluent
German	Fluent
French	Basic

Technical

Programming	C/C++, Python, Qiskit, LabVIEW, VHDL, Verilog, MATLAB, Wolfram Mathematica
Simulation	AWR Microwave Office, COMSOL, LTspice, ModelSim, IRSIM, OOMMF
Design	KiCAD PCB Designer, Autodesk Inventor, Xilinx Vivado, Magic VLSI
Devices	FPGA, Arduino, LakeShore Temperature Controller, RF Network Analyzer

REFERENCES

References available upon request.