

Doruk Tan ATILA

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SUMMARY: Final year electronic engineering student with 4.0 GPA, various projects and research experiences. Passionate about **computer architectures** (digital/analog), **embedded systems** and **materials science** with a niche interest in **neuromorphic computing**. Seeking full-time opportunities in these fields.

EDUCATION

Electronic Engineering — <i>Bachelor of Engineering</i> The University of Manchester, Manchester, UK	SEPT 2021 - JUNE 2024 GPA: 4.00
• Relevant coursework: Microelectronic Components, Digital System Design, Computer Systems Architecture, VLSI Design, C Programming, Microcontroller Engineering 1&2, Embedded Systems	
High School Diploma The American Robert College of Istanbul, Turkey	SEPT 2016 - JUNE 2021 GPA: 88.03/100

WORK EXPERIENCE

Arcanor - Istanbul, Turkey — <i>Data Analyst/Business Developer</i>	MAY 2022 - JUNE 2023
• Optimized SQL queries and developed an algorithm to query cross-country mobility data	
• Coordinated various tasks as part of a startup team, working extensively in product development, documentation, website management, Google services, translation	
• Skills: Data Analysis, Project Management, SQL, Startup Management, Google Services	
Softtech Software Technologies R&D - Istanbul, Turkey — <i>Intern</i>	JUNE 2019 - JULY 2019
• Wrote and implemented a Python code for automated and manual drone controlling	
• Trained a pattern recognition algorithm in Python to identify a medical disease with software development team members	
• Skills: Simulation, Linux - Ubuntu, Embedded Systems, Python, Machine Learning	

PUBLICATIONS

Designing Low-power, Non-invasive, Conformable, Organic Field Effect Transistor-based Sensors Using Natural Dielectric Polymers and Novel Organic Semiconductors and Their Characterizations	2024
<i>Status: Experiments - expected to be published in late 2024</i>	
• Skills: Research, Electrical Characterizations, Materials Science, Organic Electronics, Spin-coating, PVD, OFET	
A Novel Approach to Modelling of MOS Devices – Development of a Simulation Tool for MOSFET Analysis	2023 - 2024
<i>Status: Simulations - expected to be published in late 2024</i>	
• Undergraduate final year dissertation project	
• Skills: MOSFET, Modelling, Solid State Physics, Simulation, C++	
Organic Phototransistors and Their Applications on Memory Devices and Artificial Synapses	2023 - 2024
<i>Status: Applying journals - expected to be published in early 2024</i>	
• Skills: Research, Materials Science, Organic Electronics, Artificial Synapses, Neuromorphic Computing, Spin-coating, PVD, OFET	

PROJECTS

Undergraduate Final Year Project — <i>MOSFET Modelling and Simulation</i>	SEPT 2023 - MAY 2024
• Derived a MOSFET model from quantum-mechanical semiconductor physics foundations and built a standalone C++ program capable of simulating the output and transfer curves of a MOSFET with manufacturing parameters.	
• Skills: C++, Qt, MOSFET, Solid State Physics, Modeling, Simulation, Semiconductor Device, OFET	
Coursework Assignment — <i>Concurrent Systems</i>	Nov 2023 - Nov 2023
• Coded a simulation of a four-by-one hundred-meter sprint relay race. The project involved creating threads, synchronizing threads, and ensuring thread safety.	
• Skills: C++, Multithreading	
Coursework Assignment — <i>Microcontroller-Peripheral Communication I2C/SPI</i>	Nov 2023 - Nov 2023

- Programmed STM32F401RE microcontroller using low-layer C libraries to enable data transfer between the controller and peripherals.
- Skills: **Embedded Systems, C, SPI, I2C, Keil uVision**

Embedded Systems Project — *Line Following Buggy*

SEP 2022 - JUNE 2023

- Programmed STM32F401RE microcontroller to create a line-following buggy. The system gathered data from six light sensors, determined the line's position, and adjusted the motor speed to center the line using PID control.
- Skills: **Embedded Systems, C++, STM32, Algorithms**

Coursework — *VLSI Design*

MAY 2023 - MAY 2023

- Designed a 250nm technology CMOS schematic and layout of a circuit. Optimized the circuit for given speed/power requirements and passed DRC and LVS checks. The circuit implemented a logic boolean expression with 3 inputs.
- Skills: **Tanner EDA, Calibre, CMOS, Very-Large-Scale Integration**

PuzzleThon — *Line Following Buggy*

APR 2023 - APR 2023

- Programmed Nvidia Jetson Nano for a line-following buggy. The algorithm captured front-facing video, processed the image to detect line contours, and utilized PD motor control to align the line as closely as possible to the middle of the buggy.
- Skills: **Python, Robot Operating System (ROS), Embedded Systems, Image Processing**

Coursework — *VHDL Stopwatch*

NOV 2022 - NOV 2022

- Programmed an FPGA in VHDL to implement a functional stopwatch.
- Skills: **FPGA, VHDL, Finite State Machine**

Destination Imagination Tournament — *Building a Cargo Carrying Drone*

JAN 2018 - JAN 2019

- Built a quadcopter capable of carrying cargo as part of the "Destination Imagination" competition Technical category. My team earned 1st place in Turkey.
- My main responsibility was the cargo carrying. To do that, I have coded 2 Arduino boards and connected them via a Bluetooth sensor. One Arduino sent a Bluetooth signal to the Arduino on board which activated/deactivated the electromagnet on the drone. This allowed the drone to carry/drop metal-attached cargo.
- The skeleton was made by cutting spare metal parts. Flight controller hardware pieces were bought, connected, and modded.
- Skills: **Drones, Arduino, Microcontrollers, Embedded Systems, Python, Cabling, Problem Solving**

SKILLS

- Programming Languages: C, C++, CUDA, SQL, MATLAB with Simulink, Mbed, VHDL, Python, Assembly
- Software Tools: NI LabVIEW, Tanner EDA Tools, Calibre Verification, Altium Designer, Keil uVision
- Technical skills: Research, Cleanroom Practices, PVD, Spin-coating, Photolithography, Electrical Characterizations

CERTIFICATIONS

- Accelerating CUDA C++ Applications with Concurrent Streams FEB 2023
- Fundamentals of Accelerated Computing with CUDA C/C++ JAN 2023