GYOKHAN KOCHMARLA

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RELATED LINKS

LinkedIn	https://www.linkedin.com/in/gokhankocmarli/
GitHub	https://github.com/electricalgorithm
Blog	https://gyokhan.com/

EDUCATION

Marmara University   Istanbul, Türkiye
Bachelor's of Electrical & Electronics Engineering   09/2020 - 07/2024
GPA: 3.55/4.00

West Pomeranian University of Technology   Szczecin, Poland
Exchange Studies, Electronics & Signal Processing   10/2021 - 07/2022
GPA: 4.69/5.00

Istanbul University - Cerrahpasa   Istanbul, Türkiye
Bachelor's of Electrical & Electronics Engineering (Transferred)   09/2019 - 09/2020
GPA: 3.68/4.00

PROFESSIONAL EXPERIENCE

Accenture Industry X.0   Istanbul, Türkiye
Firmware and Embedded Software Engineer   07/2023 – Present
- Analyzing needs of clients and creating solutions with great detailed of system design.
- Productizing R&D algorithms into high-performance Linux workstations.
- Developing task-specialized Large Language Models using state-of-art techniques.
- Designing embedded application layer on Xilinx's Microblaze processors and preparing custom images using PetaLinux toolchain.

Sixfab Inc.   Istanbul, Türkiye
R&D Embedded Software Engineer   09/2022 – 05/2023
- Productisation of remote SIM provisioning application for Sixfab Core enabled single-board computers. Implemented an eSIM and a LPA solution for Linux-based systems.
- Development of open-source network layer for cellular connectivity on MicroPython and RP2040 chipset for Sixfab Pico LTE board.
- Design and implementation of hardware-in-loop system for MicroPython devices test-farm using Slack API and single board computers.
- Operator configuration panel design for custom needs, prepared with Bulma and Flask.

Embedded Software Engineering Intern   04/2022 – 09/2022
- Development of a C-library on AT-based cellular networking and application layer using Raspberry Pi's Pico C SDK.
- Preparation of demonstration hardware setup for CES2022 that shows the value of NB-IoT communication using RP2040 and Raspberry Pi.

YongaTek Microelectronics   Istanbul, Türkiye
Image Processing Intern   09/2022 – 05/2023
- Development of YOLOv5-based cardboard box detection for warehouses.
- Development of an image processing application for quality control of mirror production systems using Hough Lines' and Warp Transformation based on Harris Corner Detection.

Magnonic and Photonic Devices Research Group (Koc University)   Istanbul, Türkiye
Summer Researcher on MRAMs and Spintronics   07/2021 – 09/2021
- Usage of high-performance computers for conducting simulations on spintronic logic gates design project.
- Research and learn about spintronic research and micromagnetism.
- Development of logic gates using spintronics elements designed by the laboratuary research.

Sustainable Energy Research Laboratory (Istanbul Uni. Cerrahpasa) Istanbul, Türkiye
Undergraduate Researcher on IoT & Thermoelectricity   04/2020 – 09/2021
- 2 granted projects from Scientific and Technological Research Council of Türkiye for 1 year and 6 months.
- Design and development of filament extruder for thermoelectrical materails. Prepared firmwares for ESP-8266 and Arduino Mega boards and web application based user-interface for operators using WebSockets, NodeJS and MongoDB database.
- Design and development of a mobile application to enable encrypted remote control for spesific-purposed car that includes real-time camera tracking.

OPEN-SOURCE PROJECTS

Anomly Detection on Public Transportation   TinyML, NB-IoT, Zephyr RTOS, Flask
As a whole system from its web interface to nRF91 based embedded system, it provides predictive maintainance for public transportation vehicles.

Rubie's Steganography   Python, OpenCV, FFT
Implemetation of a state-of-art technique to embed two 'secret' images onto one carrier image by using frequency magnitude modulation.

Home Security System   Python, TinyML, OpenCV, Camera
Detects human presence using TinyML models and informs user with different social media applications. It uses design patterns in its architecture and runs as a systemd service.

House Environmental Sensing   C, BLE Advertisement, Zephyr RTOS, ESP32
An embedded application that shares the environmental data from BME280 sensor with BLE advertisement.

Classic Genetic Algorithm for PID Tuning   MATLAB, Evolution, Control Theory

A GUI application that does cross-over, mutation and inversion into the each generation to find PID parameters for given first-order inertia plant.

Vector-based Filtering for Noise Reduction MATLAB, Image Enhancement, Vector Filters

An image enhancement application to reduce noise in a single image with using vector median and vector directional filters.

CERTIFICATES

nRF Connect SDK Fundamentals (*Nordic Semiconductor)*	2023
Cellular IoT Fundamentals (*Nordic Semiconductor)*	2023
Blockchain: Foundations and Use Cases (*Consensys Academy)*	2022
Blockchain: Foundations and Use Cases (*Consensys Academy)*	2022
Climate Change for Youth (*Bogazici University)*	2021
Introduction to Programming with MATLAB (*Vanderbilt University)*	2020
Introduction to the IoT and Embedded Systems (*University of California - Irvene)*	2020
Linear Circuits: DC Analysis *(Georgia Institute of Technology)*	2020
Linux for Developers *(The Linux Foundation)*	2020
Object Oriented Data Structures in C++ *(University of Illinois Urbana-Champaign)*	2020
Intermediate Python *(DataCamp)*	2020
Introduction to Git *(DataCamp)*	2020
Introduction to Shell *(DataCamp)*	2020
Introduction to C++ *(Udemy)*	2019

LANGUAGES

Turkish (Native)	English (Professional Working Proficiency)
Polish (Beginner)	

SKILLS & TECH STACK

Soft Skills	Proactive team contribution, idea presentation, self-planning, SCRUM, graphical system design, project management
Embedded Systems	systemd, eBPF, Linux kernel modules, Yocto, Zephyr RTOS, MicroPython, ARM mbed, RTOS design, UART, SPI, I2C, lvgl RP2040, ESP32, nRF51, nRF91
Communication	gRPC, HTTP REST, MQTT, CoAP, WebSockets, Blutooth LE
Artificial Intelligence	Tensorflow Lite, PyTorch, LLM, RAG, OpenCV, ML Concepts, Super-Resolution
Languages	Python, C++, MATLAB, VHDL, LaTeX, Markdown