

# Aras Güngöre

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## EDUCATION

### Boğaziçi University

*B.Sc. in Electrical and Electronics Engineering; GPA: 3.62/4.00*

*Minor Degree in Computer Engineering; GPA: 3.58/4.00*

Istanbul, Turkey

*Sep 2018 – Jun 2023*

*Oct 2020 – Jun 2023*

**National University Admission Exam (YKS):** Ranked 75<sup>th</sup> in Mathematics and Science among ca. 2.3 million candidates with a test score of 489.92/500. (Jul 2018)

## SKILLS

**Languages:** C/C++, C#, Java, Python, Go, JavaScript, SQL, Swift, Scala, MATLAB, R

**Technologies:** Qt, Django, Node.js, React.js, MySQL, MongoDB, Git, SVN, Docker, AWS, Kubernetes, GCP, Unity, Linux, ROS, OpenCV, PyTorch, TensorFlow

## WORK EXPERIENCE

### Avikon

*Software Engineer*

Istanbul, Turkey

*Dec 2023 – Present, Full-time*

### SemperTech

*Software Engineer*

Istanbul, Turkey

*Sep 2023 – Dec 2023, Full-time*

- Worked on the “Arçelik Digital Home Energy” project in a collaborative effort with DAI-Labor at the Technical University of Berlin under the supervision of [Prof. Dr. Şahin Albayrak](#).
- Simulated data exchange processes with the EEBUS protocol suite using C# and Go frameworks. Migrated the entire framework from Go to C++ in order to ensure future adaptability for smart home IoT devices.
- Implemented the TLS protocol for secure data exchange using the X.509 standard and integrated multicast DNS for seamless communication, complementing the development of EEBUS protocols.

### SESTEK Speech Enabled Software Technologies

*AI Research and Development Intern*

Istanbul, Turkey

*Jan 2022 – Feb 2022, Internship*

- Implemented various NLP tasks, including NER, POS tagging, sentiment analysis, text classification, and extractive/generative QA using transformers and Hugging Face libraries. Conducted a literature review on information retrieval and reading comprehension to stay updated on the state-of-the-art ML models.
- Developed a generative question answering system with Dense Passage Retrieval and Retrieval-Augmented Generation techniques using the Haystack framework on Python.
- Worked on a Turkish open-domain question answering system by fine-tuning a BERT base model transformer with PyTorch. Tabularized exact match and F1 scores using Turkish data sets and DeepMind’s XQuAD data set.

## RESEARCH EXPERIENCE

### Max Planck Institute for Intelligent Systems

*Undergraduate Researcher*

Stuttgart, Baden-Württemberg, Germany

*Jun 2022 – Aug 2022, Internship*

- Worked in the Robotics, Collectives and Learning subgroup at the Physical Intelligence Department with former Ph.D. students [Sinan Özgün Demir](#) and [Alp Can Karacakol](#) on a project about 3D printing and heat-assisted magnetic programming of soft machines under the supervision of [Prof. Dr. Metin Sitti](#).
- Implemented an Arduino Mega driver for controlling a fluid dispenser, a laser, thermocouples, and a coil set. Updated ROS nodes for parsing G-codes and controlling stage movement and built the ROS-Arduino communication network to simulate a 3D printing and magnetic programming process with Python.

### Nanonetworking Research Group, Boğaziçi University

*Undergraduate Researcher*

Istanbul, Turkey

*Oct 2021 – Jun 2022, Part-time*

- Worked on the “Design and Implementation of Molecular Communication Systems Using Index Modulation” project under the supervision of [Prof. Dr. Ali Emre Pusane](#).
- Simulated the Brownian motion of molecules in a SISO MCvD system and predicted simulation parameters such as receiver radius, diffusion coefficient, and transmitter-receiver distance using CNNs with Keras and TensorFlow.
- Ran Monte Carlo simulations of the Gaussian model to encode/decode randomized binary sequences in a SISO MCvD system using BCSK modulation technique and calculated the bit error rate on Z-channel.