

Atahan Caldir

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EDUCATION

Özyeğin University

Istanbul, Türkiye

Bachelor of Science, Computer Science

September 2018 - February 2023

- GPA: 3.81/4.00

EXPERIENCE

Xona Space Systems

San Francisco Bay Area, CA

Payload Software Engineer

July 2025 - Present

- Working on Pulsar, a state-of-the-art satellite constellation that's delivering precision navigation, positioning, and timing from low Earth orbit

AST SpaceMobile

Midland, TX

Software Engineer

July 2023 - December 2024

- Developed and implemented software, electronic tests, and automation processes for the BlueBird constellation, which comprises the world's largest LEO satellites, as part of the ATE team
- Worked on the launch campaign of the BlueBird Block 1 satellites in the SpaceX payload processing facility (PPF) at Cape Canaveral, Florida
- Independently developed and deployed 4+ multi-threaded full-stack software for test equipment automation, test design, and satellite mass production tracking—used by 200+ users across 5 countries to test over \$500M worth of satellites
- Developed desktop software (C#, Python, SQL), web apps (TypeScript, Next.JS), APIs and hardware test scripts (Python) using various tools (Docker, OpenC3 COSMOS)
- Installed, maintained, and optimized 40+ hardware-in-the-loop (HITL) test racks in the company headquarters to support functional, solar panel, thermal, OTA, and satellite compatibility tests
- Collaborated with the company's upper management and international teams for taking long and short term strategic decisions
- Mentored technicians and operators, fostering team growth and expertise

Özyeğin University

Istanbul, Türkiye

Undergraduate Research Assistant

October 2021 - July 2022

- Worked with Dr. Mehmet Özsoy and Dr. Ata Can Bertay on global cryptocurrency statistics to understand the socio-behavioral tendencies of each country toward altcoins
- Developed a high-performance web scraping and data analysis tool using Python (Pandas, Selenium) to collect and process cryptocurrency statistics from platforms like CoinGecko and CoinMarketCap for 200+ countries

University of Cambridge

Cambridge, UK

Research Intern

July 2021 - September 2021

- Worked remotely in the AFAR Lab under the supervision of Prof. Hatice Güneş on a human-robot interaction project
- Designed a Python-based experiment environment with Robot Operating System (ROS) to use the Pepper Robot with a custom Continual Learning model
- Published 2 academic papers (~50 citations)

Özyeğin University Intelligent Systems Lab

Istanbul, Türkiye

Research Intern

February 2021 - June 2021

- Worked with Dr. Reyhan Aydoğan on a human-robot negotiation project in which I was funded by Scientific and Technological Research Council of Türkiye (TUBITAK) with the "TUBITAK STAR Program" grant
- Implemented a mathematical negotiation agent called "CodeX" that adapts to human emotions using a sliding-window pattern; it outperformed existing models in the literature based on simulations with real participants
- Developed a Python-based converter tool to translate NAO robot behavior files from Choregraphe simulation format into Webots-compatible format, enabling cross-platform experimentation

Özyeğin University

Istanbul, Türkiye

Undergraduate Research Assistant

May 2020 - January 2021

- Worked with Dr. Mehmet Özsoy on applications of NLP in Economics for correlation analysis of US companies' quarter reports and their stock prices
- Used Python for developing custom NLP models with Tensorflow and NLTK frameworks to analyze terabytes of data fetched from SEC's public EDGAR database using a custom web scraping algorithm

PROJECTS

OzU Rover Robotics Team

Istanbul, Türkiye

Technical Team Leader

September 2019 – April 2020

- Led a 30-person interdisciplinary engineering team (CS, EEE, ME) using agile development to build the 5th generation Mars rover “Hope” for the URC 2020 (Qualified for finals)
- Developed C++ software for custom PCBs based on the ATmega328P microcontroller to control low-level sensors and actuators for the science module’s autonomous sample collection and analysis
- Contributed to hardware-software integration, including PCB-level interfacing and serial communication (UART, I²C) between subsystems (e.g. NVIDIA Jetson TX2)

Software Engineer

November 2018 – April 2020

- Developed various modules of the team’s 4th generation Mars rover prototype, Theia II
- Used the Robot Operating System (ROS) effectively with Python and C++ to implement navigation, and control subsystems
- Ranked 13th among 56 teams in European Rover Challenge (ERC) 2019 organized by European Space Agency (ESA) in Poland

PUBLICATIONS

- Axelsson, M., Churamani, N., **Çaldır, A.**, & Gunes, H. (2022). “Participant Perceptions of a Robotic Coach Conducting Positive Psychology Exercises: A Systematic Analysis”. <https://doi.org/10.48550/arXiv.2209.03827>
Paper accepted for publication at ACM Transactions on Human-Robot Interaction journal
- Churamani, N., Axelsson, M., **Çaldır, A.**, & Gunes, H. (2022). “Continual Learning for Affective Robotics: A Proof of Concept for Wellbeing”. <https://doi.org/10.48550/arXiv.2206.11354>
Paper presented at 10th International Conference on Affective Computing and Intelligent Interaction (ACII) 2022
- Gökay, H., Çelik, N., Savaşlı, A., **Çaldır, A.**, Yıldırım, S., & Bebek, O. (2019). “The Comparative Analysis of the Strategies Used in Planetary Rovers’ Autonomous Locomotion”
Paper presented at Türkiye Robotics Conference (ToRK) 2019

HONORS & AWARDS

- Özyeğin University, High Honors List 2019 - 2023
- OBSS, University Specific 1st Prize in CodeMaster Hackathon March 2022
- Yandex, Honor Team Award in MusicHackOzyegin Hackathon among +14 teams July 2020
- Alternatif Bank, 1st Prize in Unobstructed Banking Hackathon among +9 teams March 2020
- Özyeğin University, Undergraduate Placement Exam Entrance Scholarship (100%) 2018

EXTRACURRICULAR ACTIVITIES

- Board Member, OzU Interdisciplinary Thought Club, Özyeğin University 2020 - 2021
- Speaker, Turkish Technology Team Foundation 2019

SKILLS

Programming Languages: Python (10+ years), C++ (5+ years), C#, Java, JavaScript/TypeScript, SQL, HTML/CSS

Frameworks: Robot Operating System (ROS), NumPy, Pandas, PyVISA, Flask, OpenCV, Keras, Tensorflow, PyTorch, Scikit-learn, Selenium, PyQt5, Pytest, GTest, FastAPI, asyncio, ZeroMQ, WPF, WinForms, .NET Core, Next.js, React

Tools: Git/GitHub, CMake, Docker, Ansible, OpenC3 COSMOS, Webots, Choregraphe, Qt Designer, Firebase, Expo, Google Cloud, GitHub Actions

Others: Socket/WebSocket programming, GUI programming, Arduino, Raspberry Pi, RESTful APIs, Multithreading, HITL, Communication protocols (UART, SPI, I²C, Modbus, etc.), Network protocols (TCP/IP), UNIX/Linux, Web crawling, CI/CD, MVC & MVVM development, TDD, Debugging, Jira, Confluence, NoSQL

Languages: Turkish (Native), English (Fluent), German (Beginner)