# Arash Sadeghi Amjadi

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## Technical Skills

**Programming Languages:** Java, C/C++, C#, Python, JavaScript.

**Artificial Inteligence:** PyTorch, TensorFlow, HuggingFace, Large Language Models (BERT, GPT), Generative Adversarial Networks, Computer Vision, LSTM, Data Mining.

**Web Development:** Typescript, HTML, CSS, ReactJS, MySQL, NodeJS (Express.js), Flask.

**Software Engineering:** AWS (**Certified Cloud Practitioner**), Azure, Git/GitHub, Github Actions, Docker, linux OS.

**Robotics:** Navigation and Path Planning, MATLAB, Robot Operating System (ROS) and Gazebo, Embedded C, AVR, ARM LPC1768,

## Work Experience

### GoodAI                                                            Prague, Czech Republic
*Full Stack Software Developer*                                       *Aug 2022 – Jan 2023*

- Designed and implemented a user-friendly ground station control software using React.js for efficient drone control.
- Implemented object detection and tracking for drones using deep learning and computer vision.
- Developed ROS node for drone navigation and control. Simulated controller in Gazebo and UE4.
- Set up REST API for drone app using C# and .NET to provide necessary information for drone during mission.

### Czech Technical University (CTU)                                  Prague, Czech Republic
*Software Developer and Researcher*                                   *Aug 2021 – Aug 2022*

- Led the development of robust Computer Vision and Deep Learning stacks, enabling precise object detection and tracking in complex environments for the Roboroyale project.
- Worked as software engineer, developing and maintaing code based for the robot software. Invloved in all aspects of software engineering.

## Projects

### Music Generation with GANs and Large Language Models              Jan 2023 - Feb 2024

- Created an AI model for real-time music generation using generative adversarial networks (GANs) and large language models to accompany human players.
- Developed and deployed the AI model as a containerized web application on Azure, building both the frontend and backend.

### Web Development for SwarmJS                                       Jun 2023

- Integrated the ReactJS frontend with external simulation engines such as Python via WebSockets.
- Developed a Python backend using Flask to enable the utilization of deep learning capabilities.

### Developing Machine Learning Pipeline for Robots                   Aug 2021 - May 2022

- Implemented navigation software for robots using computer vision, with deep learning tasks handled in Python and navigation tasks in C++.

### Robot Simulators Development                                      Sep 2019 - Apr 2021

- Developed custom robot simulators from scratch using ROS and Python, which are still actively used in the KOVAN lab.

## Publications

### Journals and Conferences in AI and Robotics                      Jan 2023 - Feb 2024

- Published significant papers in robotics and AI, focusing on robot navigation, computer vision, and solution architecture. For full details, visit my Google Scholar: Google Scholar Profile.

**Memorial University of Newfoundland (MUN)**                           St. John's, NL, Canada
*MSc in Computer Science* **Focus:** *Generative AI and Large Language Model for Real-time Music*          *Jan 2023 - Jul 2024*
- **CGPA:** 4/4

**Middle East Technical University (METU)**                                              Ankara, Turkey
*MSc in Mechanical Engineering* **Focus:** *Reinforcement Learning, Software Development*          *Sep 2019 - Sep 2021*

**University of Tabriz**                                                                            Tabriz, Iran
*BSc in Electrical Engineering* **Focus:** *Software Development for Robots*          *Sep 2015 - Jun 2019*