Zhakhangir Mamayev

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Education

Boston University Boston, MA
Bachelor of Sciences in Computer Engineering *Sep 2023 – May 2027*

Relevant Coursework Operating System, Applied Algorithms, Python and Data Science, Software Engineering

Experience

ReCo Digital Feb 2025 – Present
AI Developer Intern *Boston, MA*

- Built and deployed a **full-stack web app** using a **Gemini** to extract itemized data from receipts, reducing manual data entry time by **90%** and enabling the client to estimate food item weights in real time.
- Designed and implemented backend logic in Python Flask, integrating with Gemini Pro 2.5 APIs to achieve **92% extraction accuracy** on unstructured receipt data.
- Enabled the client to track food utilization and minimize composted waste, resulting in **20% improved resource efficiency** and supporting strategic B2B expansion.
- Retained by the client for a paid, follow-on contract to **lead the scaling of the OCR pipeline**, preparing the system for **production-level data volume**.

Boston University Mars Rover Club Sep 2024 – Present
Computer Vision Engineer *Boston, MA*

- Building pipeline to implement ROS camera and lidar module, to allow simulation of mars rover movement in **Gazeebo simulation environment**
- Configuring Xacro files to **build mars rover model** in simulation software
- Debugged errors caused by the ROS version migration

Projects

ARGO | *ROS* Nov 2024

- Collaborating on Automated Reconnaissance Geo-location Operator for **human detection in hazardous environments**
- Managing bill of materials for **budget-oriented components** for environment sensing, moving and computing
- Researching optimal **implementation of under actuated robotics**

Muscle Intelligence | *Python, Tensorflow, OpenCV, matplotlib, imageio* Oct 2024

- Collaborated on **mobile app for improving workout technique** by **using OpenCV and Tensorflow** for a HackHarvard hackathon
- **Increased the keypoint reading accuracy by 30%** by leveraging imageio to preprocess images
- Optimized a **cosine similarity algorithm** to enable body key points detection from different camera positions

Boxing Dynamometer | *C++, Arduino, Bluetooth, ESP32* Oct 2024

- Engineered product for boxers to measure punch force and mechanically display measurement
- Developed a force measurement algorithm with accommodation for multiple readings per punch
- Furthered acceleration measurement range from **4g** to **16g** by modifying IMU registers

User-space threads implementation | *C, Linux, Git* Oct 2024

- Developed a user-space POSIX thread solution with a custom scheduler
- Engineered a context switching mechanism by using jump buffers
- Achieved flexibility in thread scheduling policies customization by utilizing system signals and custom scheduling solution

Oqiga.AI | *Python, Google Colab, Tortoise TTS, Git* Feb 2023

- Built a solution to soothe children by mimicking parents voices with **81% success rate** by developing a pipeline around Tortoise TTS
- Presented project to judges leading to **top 3** placement in Make Harvard and Infosys Best Use of AI track in the MakeHarvard hackathon
- Leveraged Google Colab cloud computing to train model on judges' voices

Technical Skills

Languages: Python, C, C++, MATLAB
Developer Tools: Git, Google Colab, VS Code, PyCharm, IntelliJ, Eclipse
Libraries: Pandas, NumPy, Matplotlib