MAHIR SADIQUE
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EDUCATION

B.S. in ***Computer Science*** **| The Pennsylvania State University** Received May 2025
Relevant Coursework: OOP With Web, Database Design, Computer Organization and Architecture, Data Structures, Machine Learning, Artificial Intelligence.

TECHNICAL SUMMARY

Languages: Python, Java, C++, SQL, Rust, Selenium, TypeScript, Svelte, MATLAB, JSON, CSS, React, HTML, MongoDB, JavaScript and Redis.
Tools & Environments: Flask, APIs, XAMPP, Pandas, Matplotlib, Git, Docker, SvelteKit, Visual Studio, MySQL, Linux/Ubuntu, Vector Database, Django, YOLO, Swarm Intelligence and ROS2 Jazzy

EXPERIENCE

Software Developer Intern
Paracosmos Studio Inc. *New York, NY* *January 2025 – May 2025*

- Worked on ***TOME***, a collaborative genealogy web app built with SvelteKit, by developing and executing end-to-end and unit tests using **Selenium**.
- Tested critical workflows such as user registration, login, and verification across frontend and backend components.
- Assisted in setting up and running the full-stack environment locally using **Docker**, **Postgres**, and **MinIO**.
- Gained hands-on experience with **TypeScript**, **HTML/CSS**, and environment configuration in a modern **SvelteKit** project.

PROJECT

TurtleBot Swarm Intelligence (Sponsored by Lockheed Martin)

- Built an autonomous multi-robot search & rescue system using TurtleBot3, Raspberry Pi 4, and OpenCR, developed with Python 3.11 in the ROS2 Jazzy framework on Ubuntu 24.04.
    - Used **YOLO** and **LiDAR** for real-time object detection and obstacle avoidance.
    - Designed **AI agents** using **asyncio** for asynchronous inter-robot communication
    - Integrated **AprilTags** for localization and **MongoDB/Redis** for real-time data logging and sharing
    - Secured communication with **HMAC** and **SSH**, and managed code with GitHub and CI practices
    - Developed a **React.js** dashboard to monitor live missions, featuring a 2D Bot Location Map with directional tracking and Battery Monitoring for voltage and charge status, using **MongoDB** to fetch live mission data.