

# RAKIBUL HASSAN

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## Work Experience

### Software Engineer

Feb 2024 – Present

HL Mechatronics

Auburn, MI

- Led the development of platform applications using **Next.js**, **Prisma**, **PostgreSQL**, designing **RESTful APIs** to enhance scalability and reduce processing time by 20%.
- Developed a **Flask** microservice using Python for Excel report generation, cutting processing time by 30% and boosting Next.js backend efficiency.
- Built web app with a **FastAPI** backend to interface with **CANoe**, enabling real-time signal monitoring, modification, and automated virtual ECU control.

### Student Research Assistant – Android Sensor Data Analysis

Mar 2023 – Dec 2023

Saginaw Valley State University

Saginaw, MI

- Analyzed Android sensor data using Python libraries like **Matplotlib** and **NumPy**, applying sensor fusion techniques to enhance gesture classification accuracy.

### Research Engineer Intern/Co-Op

Jun 2022 – Dec 2023

Magna International

Troy, MI

- Led a proof-of-technology project developing an image-based vital sign detection system with **Python**, ensuring accuracy by validating heartbeat data against Android watch sensors using **Java**.

### Desktop Support Analyst

Mar 2021 – Jun 2022

Covenant HealthCare

Saginaw, MI

- Provided tier-II support to **500+** users with a **95% satisfaction rate**, ensured seamless operations, and demonstrated technical expertise by executing system admin tasks and network maintenance, preventing downtime.

### Computer Science Tutor

Oct 2020 – May 2023

Saginaw Valley State University

Saginaw, MI

- Assisted students with homework, classroom activities, research, and specific academic criteria for expedited learning.

### Web Developer Student Intern

Oct 2019 – Dec 2021

Saginaw Valley State University

Saginaw, MI

- Redesigned several websites with **HTML**, **CSS**, **JavaScript**, and TerminalFour CMS to modernize user experience and align with branding, while leading web projects to depict academic offerings accurately.

## Projects & Competitions

### NASA Robotic Mining Competition – Lunabotics 2022 | Python, C++

Oct 2021 – May 2022

- Developed software for robot-to-peripheral communication using **Python**, **C++**, **ROS**, and **UART** serial protocol, improving real-time data exchange with sensors and cameras.
- Annotated image data using **CVAT** and processed datasets with **OpenCV**, then trained a custom SSD MobileNet model using **TensorFlow**, improving object detection accuracy.

## Education

### Saginaw Valley State University

B.S. in Computer Science, CGPA – 3.35/4.00

University Center, MI, United States

January 2019 – December 2023

## Activities & Involvements

Workshop Lead | Google Developers Student Club @SVSU

July 2022 – May 2023

Core Board Member / Treasurer | Machine Learning Club @SVSU

Apr 2022 – May 2023

Software Lead | Robotics Team @SVSU

Jun 2019 – Dec 2023

## Skills

**Languages:** Python, TypeScript/JavaScript, Java, Node, C/C++, C#

**Database Management System:** SQLite, MySQL, Microsoft-SQL, NoSQL, MongoDB, PostgreSQL

**Frameworks:** NextJS, PrismaORM, React, Node, TensorFlow, Matplotlib, Pandas, NumPy

**Developer Tools:** Git, GCC/GDB, Shell Scripting, Docker, Anaconda, PowerBI, Android Studio