Nazib Abrar

R&D Intern, FronTech Limited

Robotics & Computer Vision Researcher | Back-end Web Developer

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Rajshahi, Bangladesh

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github.com/abrar-nazib

WORK EXPERIENCE

Research & Development Intern.

FronTech Limited.

06/2023 - Present *Rajshahi, Bangladesh*

Achievements/Tasks

- Developed multiple well-documented libraries for JRC Board (an Esp32 based microprocessor development board) for Arduino shield compatibility.
- Designed PCBs for custom sheilds.
- Wrote learning materials for training program.

Contact : Redwan Ferdous. Director, FronTech Limited - +880 1611-997789

Back End Web Developer

Notre Dame Information Technology Club

05/2018 - 04/2020 *Dhaka, Bangladesh*

Achievements/Tasks

- Developed the back end of the community website of NDITC using PHP.
- Designed the DBMS and managed the database of the website.
- Maintained the linux server by automating backups with bash scripts.

Contact : Md. Hamidur Rahman Khan, President, Robotics Dept, NDITC - +880 1646-442575

PERSONAL PROJECTS

CORTEX-Health: An AI Assistant for Medical Practitioners (05/023 - Present)

- Developed an API server using the FastAPI framework to facilitate seamless communication between the front-end Android application written with Flutter and the back-end machine learning models.
- Implemented three YOLO-v8 models capable of accurately predicting disease diagnoses from uploaded medical images such as X-RAY and CT-Scan reports.
- Integrated the API server with a PostgreSQL database, enabling efficient data collection and storage of text-based pathological report information for model fine-tuning.

CORTEX Robotic Arm Controller Software (03/2022 - Present)

- Developed a software capable of controlling robotic arms with varying degrees of freedom implementing homogenous transformation matrix-based forward and inverse kinematic algorithm to control theoretically any industrial robotic arms.
- Developed a GUI for controlling and simulating the robot movement with a 3D Matplotlib graph.
- Developed a custom hardware stabilization algorithm for reducing pressure on the motors while moving.
- Implemented computer vision based environmental awareness and object detection using OpenCV enabling the robotic arms to interact intelligently with their surroundings.

EDUCATION

BSc. in Mechatronics Engineering

Rajshahi University of Engineering & Technology

03/2022 - Present

Courses

- Mechatronic Systems
- Electronics
- Software Engineering
- Sensors and Instrumentation

SKILLS

Machine Learning | IOT | Problem Solving | Python | C++ | Embedded Systems | Javascript

ACHIEVEMENTS

First Runner Up - Phitron Show Your Project Contest (01/2023)
Project Showcasing Competition

First Runner Up - Robotronics 2.0 (07/2022)
Project Showcasing Competition.

Champion - DRMC Tech Carnival (02/2020)
Line Follower Robot Competition

CERTIFICATES

Supervised Machine Learning: Regression and Classification (03/2023)
Stanford Online

Advanced Learning Algorithms (04/2023)
Stanford Online

ORGANIZATIONS

Team Ogrodoot - Mars Rover Developer Team, RUET (01/2023 - Present)
Software Team Member

Notre Dame Information TEchnology Club (07/2019 - 04/2020)
Secretary Of Programming Dept

LANGUAGES

Bengali
Native or Bilingual Proficiency

English
Professional Working Proficiency

INTERESTS

Machine Learning | Research | Computer Vision | Robotics