ARIFF MUHAMMED AHSAN HUSAIN

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Highly motivated student with a solid foundation in programming and analytical problem-solving. Skilled in clear communication and efficient task execution. Actively seeking opportunities to apply technical expertise, learn from industry professionals, and contribute to cutting-edge projects in Data Analytics, Software Engineering, and Artificial Intelligence.

🎓 EDUCATION

National University of Singapore   **Aug 2024 – Present**
Bachelor of Engineering in Computer Engineering, Honours   *Singapore*
- **CGPA: 4.54/5.0, Minor in Data Analytics**
- Relevant Courses Completed: Data Structures and Algorithms
- Expected Date of Graduation: May 2028

💡 PROJECTS

OCR Model with hOCR TrstrmG   **May 2025 – June 2025**
Built for the DSTA BrainHack AI Challenge 2025   *Singapore*
- As part of the competition, as a group we were expected to come up with an ASR, OCR, CV and RL model that is adapted to the competition data. I focused on the OCR model for the competition
- Developed a custom OCR pipeline using Microsoft's TrOCR model, fine-tuned on scanned document images with hOCR annotations
- Aligned hOCR XML data with image-text regions to create accurate training samples for model recognition
- Engineered a PyTorch training script with performance tracking and post-training evaluation metrics

Personal Portfolio Website   **Feb 2025**
Developed to house my personal projects   *Singapore*
- Designed and developed a personal portfolio website to showcase projects, skills, and experiences in computer engineering, software development, and UX/UI design
- Built using React with Vite for fast performance, leveraging Tailwind CSS for modern styling and responsive design
- Implemented an interactive and structured UI to highlight work in programming and robotics
- Deployed the website on Netlify for fast global access
- Maintained and updated content regularly to reflect ongoing projects and professional growth

Pawgress – Personal Task Manager with Virtual Pet Companion   **Jan 2025**
Developed during NUS HacknRoll 2025   *Singapore*
- Integrated task management with a virtual pet to enhance user engagement and productivity
- Utilized Vite for fast bundling and development, ensuring high performance
- Leveraged React and Tailwind CSS for a responsive and dynamic user interface, ensuring an enjoyable user experience
- Built the backend using SQLite for effective data storage and management

Autonomous Maze Navigation with mBot   **Sep 2024 – Nov 2024**
Project conceived and built in engineering module   *Singapore*
- Designed an autonomous mBot for maze navigation, integrating Arduino programming and circuit design
- Utilized color, IR, and ultrasonic sensors for path detection, positioning, and obstacle avoidance
- Developed PID control for precise wall tracking and dynamic steering
- Applied k-nearest neighbors (k-NN) to enhance color sensor accuracy and path optimization

🏅 AWARDS

- **NUS HacknRoll Hackathon (2025):** Quacker's Commendation Top 15 Award for Innovation
- **DSTA BrainHack (Artificial Intelligence) (2025):** Semifinalist
- **WorldQuant International Quant Competition (2025):** Gold Award

🔧 SKILLS

- **Languages:** English (Proficient), Tamil (Native)
- **Programming:** C, C++, Python (Framework(s): Flask), Java (Frameworks(s): Springboot)
- **Database Management:** PostgreSQL