Ahamed Dhahlan

Galle, Sri Lanka ahameddhahlan3890@gmail.com +94 76 010 43 14
linkedin.com/in/ahameddhahlan3890 github.com/ahameddhahlan3890

SUMMARY

Motivated Electronic Engineering student with hands-on experience in embedded systems, and digital signal processing. Adept at using SystemVerilog, MATLAB, and hardware description languages. Excels in developing innovative solutions for complex problems and committed to advancing skills in semiconductor technologies.

EDUCATION

Bachelor of Science in Engineering (Honors) - Electrical and Information
March 2021 Present
University of Ruhuna, Galle, Sri Lanka

- ✓ *Relevant coursework*: Digital Signal Processing, Embedded Systems, VLSI Design, Microcontroller Programming, Control Systems

GCE Advanced Level and GCE Ordinary Level
January 2017 August 2019
Zahira College, Kalmunai, Sri Lanka

PROJECTS

Singlish GPT: Language Model for Sinhala in English Letters
July 2024

- ✓ Implemented a GPT model for Singlish text processing and generation using mT5 and various libraries.
- ✓ Leveraged Hugging Face Transformers and PyTorch for efficient model training and deployment.
- ✓ Utilized Aksharamukha and Google Gemma libraries for Sinhala language support.

Intrusion Detection System using Machine Learning: Enhancing Network Security
July 2024

- ✓ Trained an advanced Intrusion Detection System (IDS) leveraging machine learning techniques to detect and mitigate network intrusions, providing real-time monitoring and alerting capabilities.
- ✓ Utilized both supervised and unsupervised learning approaches (scikit-learn, TensorFlow) to analyze network traffic and identify anomalous behavior, ensuring comprehensive security coverage.
- ✓ Developed a web-based interface (Flask/Django) for visualizing intrusion alerts and providing user-friendly access to IDS insights.
- ✓ Utilized pandas, numpy, and SQL for data manipulation and analysis.

CodeForgeAI: Code Generation from Webpage Screenshots
May 2024

- ✓ Developed a tool to generate code from webpage screenshots with real-time previews, enhancing coding efficiency.
- ✓ Implemented OpenCV for image processing and TensorFlow for object detection, enabling the system to accurately identify webpage elements.
- ✓ Built a web application (Flask/Django) with a user-friendly interface for uploading screenshots and viewing generated code.
- ✓ Utilized JavaScript, HTML/CSS for front-end development.

Third eye glove for Guiding the Blind with Intelligent Vision
February 2024

- ✓ Developed a wearable glove equipped with real-time image processing capabilities, enabling obstacle detection and environmental awareness for visually impaired users.
- ✓ Integrated a camera module, microcontroller (Arduino), and audio output to provide real-time auditory guidance based on visual data.
- ✓ Utilized Python, C++, Computer Vision, and Image Processing techniques for analyzing visual input and generating auditory alerts.
- ✓ Employed Raspberry Pi as the central processing unit for efficient image processing and control.

GloSign: Empowering Deaf Communication
February 2024

- ✓ Developed a sign language translator achieving 96% accuracy in gesture recognition, facilitating communication for the deaf.
- ✓ Integrated gesture recognition (OpenCV, Mediapipe), speech-to-text algorithms (TensorFlow), and wearable devices (Arduino) to create a seamless communication experience.
- ✓ Utilized machine learning techniques (Python) to train the gesture recognition system for accurate translation.

LipLexa: AI-powered Lip Reading System for Videos
January 2024

- ✓ Created a state-of-the-art lip reading application with TensorFlow and OpenCV.
- ✓ Developed an advanced algorithm for accurate speech interpretation from visual cues, with applications in security, assistive technology, and media analysis, resulting in a 50

GestureGear: Hand-Gesture Controlled Car Racing Game
January 2024

- ✓ Engineered an advanced real-time hand tracking and gesture recognition system, achieving a 40% increase in user interaction accuracy and elevating overall gameplay experience.
- ✓ Utilized Python, OpenCV, Mediapipe, and Matplotlib to implement the hand tracking and gesture recognition capabilities.

RealVision+: An Advanced Face and Expression Analysis Application
September 2023

- ✓ Developed a cutting-edge face recognition app capable of accurately identifying individuals and predicting their gender in real-time.
- ✓ Utilized Python, machine learning (ML) techniques, OpenCV, and Matplotlib for facial detection, recognition, and analysis.

WeedSense: Automated Weed Removal
February 2024

- ✓ Achieved 93% accuracy in automated weed detection using SVM classification on preprocessed image data.
- ✓ Utilized Python, Arduino, machine learning (ML), and sensors for image analysis, weed identification, and control.

TECHNICAL SKILLS

Programming Languages

- C/C++:
✓ Developed embedded systems software for various projects, including GloSign and Third eye glove.
- Python:
✓ Implemented machine learning models for projects like WeedSense, GloSign, and LipLexa.
✓ Utilized Python libraries like TensorFlow, PyTorch, OpenCV, scikit-learn, and pandas for data analysis, image processing, and machine learning tasks.
- SystemVerilog:
✓ Designed and simulated digital circuits for FPGA-based projects.
- Verilog/VHDL:
✓ Experienced in hardware description languages for FPGA design and simulation.

Tools and Libraries

- MATLAB:
✓ Used MATLAB for signal processing, analysis, and algorithm development.
- ModelSim/Vivado/Cadence:
✓ Utilized these tools for FPGA design, simulation, and verification.
- Git/GitHub:
✓ Implemented version control for collaborative projects and code management.
- TensorFlow/PyTorch:
✓ Experienced in using these deep learning frameworks for machine learning projects.
- OpenCV:
✓ Utilized OpenCV for computer vision tasks like image processing, object detection, and gesture recognition.

Hardware

✓ Extensive experience working with FPGA boards, Raspberry Pi, Arduino, and microcontrollers for embedded systems and prototyping.

Web Development

- Node.js:
✓ Used Node.js for server-side development in web applications.
- VS Code/Git/GitHub:
✓ Implemented a robust workflow for web development.

Frameworks and Databases

- ReactJs/Django:
✓ Experience with front-end and back-end web development frameworks.
- MongoDB/Firebase/SQL:
✓ Proficient in using various database systems for data storage and management.

Soft Skills

✓ Strong problem-solving and analytical skills.
✓ Self-motivated learner with a passion for exploring new technologies.
✓ Excellent communication and presentation skills.
✓ Adaptable to diverse project environments and readily embrace new challenges.
✓ Critical thinking abilities to analyze problems and formulate effective solutions.

CERTIFICATES & AWARDS

✓ Certificate in SystemVerilog for ASIC/FPGA Design & Simulation

- ✓ Certificate in Introduction to Deep Learning & Neural Networks with Keras
- ✓ Certificate in Machine Learning with Python
- ✓ Certificate in Python for Data Analysis: Pandas NumPy
- ✓ edX Verified Certificate for Data Science: Machine Learning
- ✓ 2nd Runners up, Haxtreme 2.0, IEEE Society (November 2023)
- ✓ Top 10%, AWS Deep Racer, AWS (August 2023)
- ✓ Participant, Commercial Bank Hackathon, Commercial Bank (June 2024)

REFERENCES

References available upon request.

- Dr. Kushan Sudheera
- Senior Lecturer
- Department of Electrical and Information Engineering
- Faculty of Engineering
- University of Ruhuna
- Galle, Sri Lanka
- +94719693164
- kushan@eie.ruh.ac.lk