

AROWA YASMEEN

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PUBLICATIONS

LLM-Sentry: A Model-Agnostic Human-in-the-Loop Framework for Securing Large Language Models

Published: 2024 IEEE 6th International Conference on Trust, Privacy and Security in Intelligent Systems, and Applications (TPS-ISA).

Technologies: **Large Language Models (LLMs), Retrieval Augmented Generation (RAG), LLM Security**

Recent Research Progress on Ground-to-Air Vision-Based Anti-UAV Detection and Tracking Methodologies: A Review

Published: 2025 Drones, Volume 9, Issue 1

Technologies: **Computer Vision, Object Detection, Object Tracking, Anti-UAV**

CSVC-Net: Code-Switched Voice Command Classification using Deep CNN-LSTM Network

Published: 2021 Joint 10th International Conference on Informatics, Electronics & Vision (ICIEV) and 2021 5th International Conference on Imaging, Vision & Pattern Recognition (icIVPR).

Technologies: **CNN-LSTM, Audio Signal Processing**

PROFFESIONAL EXPERIENCE

AI Engineer | Feb 2021 - May 2022 (full-time)

Intelligent Machines Ltd - Dhaka, Bangladesh

Contributions:

- Developed and deployed production-grade **Custom Optical Character Recognition (OCR)** models achieving 92%+ accuracy for multiple languages (Bengali, English, Khmer) using CNN architectures to build Know Your Customer (KYC) systems.
- Implemented and optimized **Keyword Spotting (KWS)** and **Automatic Speech Recognition (ASR)** models using LSTM networks to handle audio signal processing to build an employee KPI analytics system that improved employee performance by 40%+.
- Established ML model documentation standards and supervised **Ethical AI** guidelines for all running projects in order to improve model explainability and comply with AI regulations depending on client locations.

EDUCATION

The University of Texas at Dallas - Texas, United States of America

- PhD in Computer Science** (*presently enrolled*)
 - Joined in Fall 2022

Relevant Coursework: Artificial Intelligence, Machine Learning, Natural Language Processing, Design and Analysis of Algorithms, Database Design, Recent Advances in Computing: Large Language Models, Developing secure Cloud, Edge, IoT systems, Statistical Methods for Data Science

Islamic University of Technology (IUT) - Gazipur, Bangladesh

- B. Sc. in Computer Science and Engineering**
 - Class of 2020

ACHEIVEMENTS

- Best Research Paper Presentation Award in 2021 Joint 10th ICIEV and 5th icIVPR
- Champion of ICT idea contest powered by Bondstein
- Runners up of Nutrition Hackathon powered by Bangladesh ICT Ministry
- Cambridge World Highest Achiever for Pure Mathematics in A-Levels

ACADEMIC PROJECTS

- **Multiple Object Tracking (MOT)**
 - Implemented DETR (for object detection) and DeepSORT (for object tracking) algorithms to build an MOT system for pedestrians
- **Voice Command Classification**
 - Built and trained CNN-LSTM networks for multilingual command recognition to control browser interface using the user's voice
- **Banglish - A Dataset for Bangla-English Code-switched Voice Commands**
 - Initiated and contributed to curating an open-source code-switching dataset for the Bangla-English language set.

SKILLS

- **Programming Languages:** Python (Primary), C++, C
- **ML Frameworks:** TensorFlow, PyTorch, OpenCV, Scikit-learn
- **Libraries:** Numpy, Pandas, Seaborn, Matplotlib
- **MLOps:** Azure ML, Git, Docker
- **Soft Skills:** Persistence, Team Player, Leadership, Public Speaking, Conflict Management

REFERENCES

Dr. Ovidiu Daescu

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