

Muttaki I. Bismoy

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SUMMARY

- Machine Learning Engineer with 3+ years of experience in data engineering, AI/ML modeling, and NLP
- Built real-time ML pipelines with 99.85% accuracy for Sign Language & 98.37% accuracy for UAV-based Oak Wilt detection
- Proficient in recommender systems, transformer models (Wav2Vec2, DistilRoBERTa), and cloud deployment (GCP)
- Experienced in data visualization and building web applications to deliver actionable insights
- Experienced in Agile development, led 2 interns, managing 10+ brands/month, weekly scrums

SKILLS

- Machine Learning & NLP: Data Engineering, Recommender Systems, Transformer Models (Wav2Vec2Processor, DistilRoBERTa, SpeechBrain)
- Python based Libraries: OpenCV, Pandas, Scikit-image, Tensorflow, Keras, PyTorch, Torchvision, NumPy, Pillow, Seaborn, DeepFace, Matplotlib
- Software Development: Flask, VueJS, PyQt5, Streamlit, Electron; Code Analysis Tool: ESLint (Prettier)
- Programming Languages: Python, Java, Dart, Javascript and R
- Software: VS Code, PyCharm, Android Studio, Adobe AI, Eclipse, Jupyter Notebook, Netbeans (Java) & MS Office
- Software Testing: PyUnit, JUnit, Selenium, Mutation Testing, Code Coverage, Boundary Value Testing
- Platforms: Google Colab, Firebase, Docker, Google Cloud Platform, GitHub, and Electron
- Research: Published one paper on IEEE Xplore and 2 under peer-review; Grant Writing: Overleaf (LaTeX)
- Demonstrated leadership and collaboration, ensuring effective interpersonal and client communication
- Computer Vision (using Deep Learning Models, YoloV4, CNN, Fast-CNN, RNN and Multiple Pre-trained Models: EfficientNetB1, DenseNet201, ResNet50, MobileNet, VGG16, and EfficientNetB0)
- Eval Boards: RaspberryPi, ArduinoUNO; Wireless Communication Tools: Wireshark
- Database Management: MySQL, NoSQL, Redis, Neo4j

WORK EXPERIENCE

Graduate Research Assistant

Grand Valley State University, Applied Computing Institute

Aug 2023 – Present

Oak Wilt Detection – Michigan DNR

- Developed & trained Machine Learning model (98.37% accuracy, 97% recall) for oak wilt detection using UAV images
- Implemented a VueJS and Flask-based web app integrated with Google Cloud for real-time analytics
- Built visualization dashboards using Streamlit and OpenStreetMap for policy-level decision-making
- Integrated Reinforcement learning from human feedback (RLHF) for dynamic model improvements
- Authored research proposals & grant applications (67th Forest Pest Management Forum, Reach-Higher Showcase '24)
- Labeled multispectral image data and ran it on YoloV4; Hosted oak wilt detection website using Google Cloud Platform
- Conducted webhost testing with multiple testing tools (Selenium, PyUnit) for both frontend and backend
- Built PyQt5 desktop app for image down sampling & JPG conversion, focusing on UAV images

Sermon Interpretation - PRTS

- Developed audio & text-based emotion recognition systems using NLP models like Wav2Vec2Processor & DistilRoBERTa
- Built real-time recommender systems for matching sermon emotions using transformer-based architectures
- Conducted bi-weekly scrums to track project milestones and performance metrics

Television Media Executive (TV Data Analyst)

GroupM Bangladesh

Aug 2022 – Aug 2023

- Planned avg. 37 monthly campaigns for Marico Bangladesh, delivered 41% monthly ROI by designing data-driven strategies
- Automated and optimized reporting pipelines, reducing reporting time by 20%
- Conducted data-driven market research, identifying trends to drive - 4+ innovative campaigns annually
- Implemented ad positioning experiment, improving customer value by 21%

EDUCATION

Grand Valley State University - Masters in Applied Computer Science

Major in Software Engineering

Aug 2023 - current, CGPA - 3.87 in a scale of 4.00; 30 out of 33 Credit Hours Completed

BRAC University - BSc. in Engg. in Computer Science and Engineering

Jan 2018 - Jun 2022, CGPA - 3.74 in a scale of 4.00; in major 3.89