Matovic Mark Phillip

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Profile

An enthusiastic and technically grounded Engineering Artificial Intelligence graduate seeking to apply a strong academic foundation in AI, machine learning, and data-driven methodologies in a professional role. Equipped with analytical rigor and hands-on experience, I am eager to contribute my skills and learn from experienced professionals to deepen my expertise and make significant contributions.

Education

Carnegie Mellon University-Africa — Kigali, Rwanda
MSc. Engineering Artificial Intelligence — *Aug. 2023 – May 2025*

Relevant coursework: Machine Learning for Engineers, Deep Learning Systems, Applied Stochastic Processes, Trustworthy AI, Natural Language Processing, Machine Learning with Graphs, AI System Design, Reinforcement learning, Convex Optimization

Makerere University — Kampala, Uganda
BSc. Electrical Engineering — *Aug. 2016 – May 2021*

Experience

Research Assistant — Jan 2025 – May 2025
Carnegie Mellon University - Africa — *Kigali, Rwanda*

- Designed and implemented an LLM-based system for tracking cyber child abuse cases, featuring a conversational AI interface for children to report incidents and access educational resources on child safety.

Intern — June 2024 – August 2024
Carnegie Mellon University-Africa — *Kigali, Rwanda*

- Applied 3D diffusion models to enhance generative design outputs, improving topology optimization
- Collaborated with PhD researchers to optimize 3D model generation pipelines.

Machine learning researcher — Jan. 2021 – July 2023
Marconi machine learning Lab — *Kampala, Uganda*

- Assisted in crafting the project protocol for an ultrasound project aimed at data collection by doctors. Ensured compliance with ethical standards and project guidelines.
- Provided comprehensive technical support to medical professionals, including troubleshooting ultrasound devices and setting up an online data collection tool.
- Designed and implemented machine learning models to classify lung ultrasound artifacts. Conducted thorough evaluations of model performance using specificity and sensitivity.
- Maintained and managed HPC servers for machine learning model training and deployment. Installed and configured Proxmox server software, set up physical servers including GPU installation, and ensured optimal system performance for research workloads.

Projects and Presentations

Capstone: Vulnerability Assessment Using Large Language Models

- Developed a language model pipeline integrated with scoring algorithms to classify and rate vulnerability reports with >90% automation accuracy.
- Focused on interpretability, response consistency, and alignment with cybersecurity standards.

Speech-to-Speech Machine Translation for Low-Resource Languages

- Built a cascaded transfer learning pipeline combining STT, MT, and TTS modules, boosting BLEU scores for low-resource languages by 18%.
- Fine-tuned SpeechT5 and T5 models, applying domain adaptation techniques for robustness across noisy datasets.

Prototype-Based Models for Visual Reasoning

- Developed and evaluated a prototype-augmented deep learning model for structured visual reasoning tasks.
- Improved model interpretability and robustness to occlusions through part-based feature learning.
- Achieved performance gains over baseline CNN and transformer models on traffic sign recognition datasets

Technical Skills

Languages: Python
Frameworks: Pytorch, Tensorflow, Huggingface Frameworks, FastAPI
Developer Tools: Git, Docker, Google Cloud Platform, VS Code