KAVINDU PIYUMAL

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EDUCATION

- **Florida State University** *Aug 2023 - Present*
  MSc in Computational Science Tallahassee, USA
  ◦ GPA: 3.82/4.00
- **Sri Lanka Institute of Information Technology** *Mar 2019 - Mar 2023*
  BSc in Electronic and Electrical Engineering Malabe, Sri Lanka
  ◦ GPA: 3.71/4.00

PROJECTS

- **Vision Language Understanding in Image Captioning Models** *Jul 2024*
  Tools: Jax, Pytorch, Numpy, XLA
  ◦ Implemented RNN, LSTM, and Transformer-based models for image captioning
  ◦ Analyzed gradient flow and benchmarked performance
- **Deep Generative Models for Image Generation** *Jan 2024*
  Tools: Pytorch, Numpy
  ◦ Implemented auto-regressive, variational autoencoder, GAN, and diffusion models
  ◦ Compared performance across models with different MCMC sampling mechanisms
- **Masked Autoencoders with Vision Transformers** *Aug 2023*
  Tools: Pytorch, Numpy
  ◦ Implemented Masked Autoencoders for self-supervised learning
  ◦ Integrated Vision Transformers for better context capture

PUBLICATIONS

- **K. Piyumal**, K. Wijayasekara, G. Fernando, N. Mihiranga, "Hungarian Algorithm-Based Method to Perform Matching Tasks in Offline Re-Identification," in International Workshop on Data-Driven Insights for Smart City Applications, 2023

EXPERIENCE

- **Center for Ocean Atmospheric Prediction Studies (COAPS)** *Nov 2023 - Present*
  Graduate Research Assistant Tallahassee, USA
  ◦ Developed a super-resolution algorithm for oceanography data, enhancing spatial resolution using sea-surface height, temperature, and wind velocity
  ◦ Designed an attention mechanism to dynamically weight inter-channel and intra-channel features
- **Atlas Labs (Pvt) Ltd.** *Jan 2023 - Aug 2023*
  Data Scientist Colombo, Sri Lanka
  ◦ Developed Kalman filter-based fusion algorithm for tracking motion-based metrics from GPS, accelerometer, and gyroscope data
  ◦ Implemented CPU-efficient detection and tracking algorithms for horses and humans in stables
  ◦ Developed a Visual Question-Answering (VQA) model to enhance image-based question answering
- **Zone24x7 (Pvt) Ltd.** *Sep 2021 - Dec 2022*
  Machine Learning Intern Colombo, Sri Lanka
  ◦ Developed a people re-identification algorithm for efficient offline query matching
  ◦ Implemented people detection, inter-camera tracking, and multi-camera multi-people tracking algorithms

TALKS

- **Understanding Diffusion Models** *Apr 2024*
  Machine Learning Colloquium - Florida State University
  ◦ Delivered a talk on diffusion models, from score-based models to diffusion models

HONORS AND AWARDS

- **Excellent Academic Performance** *Mar 2023*
  Sri Lanka Institute of Information Technology
  ◦ Merit-based award for second-highest performance in the Department of Electrical and Electronic Engineering

SKILLS

- **Programming Languages:** Python, C, C++, Zig, Cuda, Assembly, Matlab
- **Tools & Software:** PyTorch, Jax, XLA, TensorFlow, OpenMP, Pthread, MPI, Numpy, Scikit-learn