

Amila Indika

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Education

University of Hawaii at Manoa M.Sc. in Computer Science (GPA: 3.91/4.00) May 2025
Interests: Artificial Intelligence, Software Engineering

University of Peradeniya, Sri Lanka B.Sc. in Computer Engineering (GPA: 3.85/4.00) Aug 2020

Relevant Coursework

Graduate: Analysis of Algorithms, Machine Learning, Deep Learning with Neural Nets, Advanced AI

Undergraduate: Data Structures & Algorithms, Machine Learning and Data Mining, Software Engineering

Skills

Python (6+ years) | Java (7+ years) | C (6+ years) | C++ (3+ years) | Bash (6+ years) | MySQL (3+ years) | MongoDB (1+ year) | AWS (1+ years) | Scikit-learn (5+ years) | PyTorch (5+ years) | TensorFlow (5+ years) | Optuna (2+ years) | HTML (3+ years) | CSS3 (3+ years) | JavaScript (2+ years) | LaTeX (5+ years) | OpenCV (2+ years) | HPC (4+ years) | Docker (1+ year) | R (<1 year) | Spark - PySpark (<1 year) | Machine Learning (6+ years) | Deep Learning (5+ years)

Work Experience

University of Hawaii at Manoa, Department of Information and Computer Science

Graduate Teaching Assistant (TA) | Java, C, Bash Aug 2024 – May 2025 | Aug 2022 - May 2023

- Assessed homework and provided detailed feedback for **50+ undergraduate students**, improving comprehension of complex concepts by addressing student inquiries and clarifying course material
- **Earned high student satisfaction, with 86% of 50 students** rating the TA experience 4 or 5 on a 5-point scale, demonstrating effective teaching and support through personalized guidance and interactive discussions
- Conducted hands-on demonstrations of **Wireshark** and **Vagrant**, enhancing student engagement and practical understanding of networking concepts by integrating real-world tool usage into coursework

Graduate Research Assistant (RA) | Python, TensorFlow, PyTorch, SLURM, Git May 2023 – Aug 2024

- Implemented **Gaussian Process** and **Neural Network** models for two research projects, contributing to a **journal paper and a technical report** utilizing **GPyTorch, PyTorch, TensorFlow, and LaTeX**
- Collaborated with computer scientists, geographers, and industry partners, enhancing interdisciplinary research outcomes by integrating domain expertise and technical solutions
- **Presented research findings at technical workshops**, increasing project visibility and stakeholder engagement by showcasing results to tech professionals and the public
- **Mentored and guided five undergraduates**, ensuring technical proficiency and project success by supervising multiple data science initiatives

Department of Computer Engineering, University of Peradeniya, Sri Lanka

Lecturer on Contract | OpenCV, Python, C, Java Aug 2021 – Jul 2022

- Taught undergrad computer & electrical engineering courses using structured lectures and hands-on learning
- Collaborated with senior lecturers to design coursework and assessments, improving course effectiveness and student engagement by developing homework, exams, and lesson plans

Graduate Teaching Assistant (TA) | Git, GitHub, Python, C, Java Aug 2020 – Aug 2021

- Developed and graded assignments for undergrad courses, averaging 60 students, with structured evaluation
- **Automated grading for a web dev. course** using **GitHub Classroom**, significantly reducing grading time by implementing **automated unit tests** with **GitHub Actions**
- **Led four assistant TAs** to grade an embedded hardware course, ensuring evaluation consistency and accuracy

Network Administrator | HPC, Linux-OS, Bash Aug 2020 – Jul 2022

- **Administered 3 Linux servers** with dedicated GPUs/CPU's for High-Performance Computing (HPC), ensuring optimal performance and accessible research computing via proactive maintenance and resource management

- Managed FPGA, Windows, and file servers, maintaining smooth operations and user access by performing routine maintenance, storage checks, and troubleshooting server anomalies
- **Installed and troubleshooted software on HPC servers**, supporting researchers with computational workloads by collaborating with lab technicians to maintain server hardware and software environments

Zone24x7 (Pvt) Ltd., Sri Lanka

Trainee Associate Software Engineer - Data Science Internship | Python, TensorFlow Feb 2019 – Jul 2019

- Developed **anomaly detection** components for **two AI projects in the KOHL's US retail chain**, improving operational efficiency by analyzing millions of log files and tabular data using machine learning
- Implemented the **OneClassSVM** algorithm to detect outliers in customer visit counts, enhancing anomaly detection accuracy for the same retail chain through advanced statistical modeling
- Led data science efforts, driving key project milestones and ensuring project success by collaborating with project managers, senior engineers, architects, and QA testers
- **Presented findings to the client and CTO** during sprint meetings, shaping decision-making and AI adoption strategies by providing key updates on AI model performance and insights

Selected Projects

Spreadsheets with Large Language Models (LLMs) | Python, GPT, Llama, Gemma, JS May 2024 – Present

- Developed a system for **translating Excel manipulation code into textual summaries**, improving the interpretability of spreadsheet automation tasks by reverse-engineering a codebase from a research paper
- Integrated large language models (LLMs) **GPT-4, Llama-3.3, Gemma2, and Mixtral-8** into the translation pipeline, enabling performance comparison across models by using **OpenAI, Groq, and Hugging Face APIs**
- Implementing a **Retrieval-Augmented Generation (RAG) pipeline** to generate JavaScript code for Excel manipulation, reducing hallucinations in LLMs by integrating contextual retrieval with **LangChain**
- **Co-authoring a research paper (in preparation)** on the code translation system, ensuring its reproducibility for researchers and developers by publicly publishing the proposed method and implementation details

Statistical Downscaling of Climate Models | Python, GPyTorch, SLURM, Git May 2023 – May 2025

- Generated future rainfall forecasting maps by extracting **CMIP6 Global Climate Model (GCM)** data and applying statistical downscaling using **Python**, to support improved water resource management in Hawaii
- Developed the **Gaussian Process and linear models as baselines**, providing a comparison against a novel deep learning-based statistical downscaling for climate predictions using **GPyTorch, Python, and Scikit-learn**
- **Co-authored a journal paper** (under review) on statistical downscaling, contributing novel AI methodologies through research documentation in LaTeX
- Developed rainfall map visualizations for the Hawaiian Islands, enhancing the ability to identify rainfall trends by leveraging Python for data analysis and visualization

Net Radiation Analysis for the Hawaiian Islands | Python, TensorFlow, SLURM Aug 2023 – Dec 2023

- Analyzed nighttime long-wave radiation across Hawaii, improving power and energy calculations for the region by using **neural network models with TensorFlow**
- Co-authored technical reports and presented findings to industry professionals, enhancing research impact by delivering insights on solar radiation trends and predictive modeling
- **Partnered with MITRE scientists** to conduct net radiation analysis, ensuring methodological rigor and applicability through interdisciplinary collaboration

Mobile Accessibility Trends in Stack Overflow | Python, SQL Aug 2023 – Aug 2024

- Extracted and cleaned mobile accessibility questions from Stack Overflow, improving the analysis process using **SQL** and NLP techniques
- **Led 3 Master's students**, ensuring successful project completion through effective research coordination
- Developed a topic modeling system with **Python**, categorizing key mobile accessibility issues by using the **Top2Vec** method
- **Published findings in the peer-reviewed conference (HICSS 2025)**, contributing insights on mobile accessibility challenges for developers, researchers, and students

Fellowships and Awards

- Spring'25 Best Master's plan B poster at the department of Computer Sciences at UH Manoa May 2025
- Hawaii Data Science Institute (HIDSI) Junior Data Scientist Aug 2024 – May 2025
- East-West Center (EWC) Student Affiliate Aug 2022 – Present
- HIDSI Data Science Fellowship ([link](#)) Aug 2023 – Jul 2024