(757) 332-3331
Williamsburg, VA
kgdesilva@wm.edu

Nadeeshan De Silva

PhD Candidate | Software Engineer

Portfolio: ngimhana.github.io/
github.com/ngimhana
linkedin.com/in/nadeeshangimhana

Fourth-year Ph.D. Candidate in Computer Science at William & Mary, advised by Prof. Oscar Chaparro. My research leverages Large Language Models (LLMs) and Deep Learning to improve developer productivity and software evolution. I bring 6 years of industry experience building production ML/DL systems.

Education

William & Mary, Williamsburg, VA — Sep 2022 — present
- Ph.D. in Computer Science (GPA 4.00 / 4.00) | Advised by Prof. Oscar Chaparro
- International Student Opportunity Scholarship (2024)

University of Moratuwa, Sri Lanka — Feb 2016 — Jan 2020
- B.S. (Hons) in Computer Science & Engineering (GPA 3.53/4.00)
- Graduated with Distinction (SGPA 3.98 / 4.00, A+ Bachelor's Thesis)

Experience

Graduate Research Assistant — **Sep 2022 — Present**
William & Mary — *Williamsburg, VA, USA*
- Designed and executed large-scale code comprehension experiments benchmarking GPT-4 against six Machine Learning algorithms (e.g., Random Forest). The study analyzed over 10M human measurements across 150 code snippets, utilizing correlation-based feature selection and SMOTE for data augmentation. By optimizing the pipeline with RAPIDS cuML libraries, able to reduce end-to-end training time by 40%.
- Built a multi-modal Transformer prototype for duplicate detection, using attention mechanisms to weight screen captures against text descriptions. Experimental analysis identified data scarcity as the limiting factor for SOTA performance, proposing a novel synthetic data generation strategy to overcome this bottleneck.

Senior Software Engineer — **Feb 2020 — July 2022**
Enactor Ltd (UK-based) — *Colombo, Sri Lanka*
- Developed and optimized React + backend modules for enterprise clients, improving performance and user experience.
- Improved platform maintainability by 20% via systematic code refactoring and optimization, directly addressing software performance bottlenecks.
- Contributed across the full SDLC, including design, development, deployment, and performance tuning.

Google Summer of Code Intern (Open-Source Project) — **May 2019 — Aug 2019**
The Apache Software Foundation — *Remote*
- Designed and implemented modularized, reusable React components and improved JAX-RS-REST APIs for Apache OODT 2.0.

Selected Publications

- **Nadeeshan De Silva**, Martin Kellogg, Oscar Chaparro. "Relative Code Comprehensibility Prediction." *arXiv preprint*, 2025. [arXiv]
- Y. Song, J. Mahmud, **Nadeeshan De Silva**, et al. "LadyBug: A GitHub Bot for UI-Enhanced Bug Localization in Mobile Apps" *International Conference on Software Maintenance and Evolution (ICSME)*, 2025. [PDF]
- J Mahmud, **Nadeeshan De Silva**, S. A. Khan, et al. "On Using GUI Interaction Data to Improve Text Retrieval-based Bug Localization" *International Conference on Software Engineering (ICSE)*, 2024 (Research Track, 6.6% acceptance). [PDF]
- Y. Song, J. Mahmud, **Nadeeshan De Silva**, et al. "BURT: A Chatbot for Interactive Bug Reporting." *International Conference on Software Engineering (ICSE)*, 2023. [PDF]

Skills

Programming	Python, Java, SQL, Bash, CUDA, LaTeX
ML/DL	PyTorch, Scikit-learn, Hugging Face, RAPIDS cuML, NumPy, Pandas
ML/AI Techniques	LLMs & Transformers (GPT, BERT, Llama), Fine-tuning & Quantization, Multi-modal Learning
Tools & Systems	Linux, Docker, Git, SLURM, Matplotlib, Weights & Biases

Honors & Service

- **Junior Program Committee Member**, International Conference on Mining Software Repositories (MSR) 2025
- **External Reviewer** for ICSE (2023, 2024, 2026), FSE (2023), ICSME (2023, 2025), ICPC (2025, 2026), IEEE Software (2024)
- **Best Paper Award**, International Conference on Advances in ICT for Emerging Regions (ICTer) 2019
- **ACM SIGSOFT Travel Grants**, International Conference on Software Engineering (ICSE 2024, 2026)
- Presented research at ICSE 2024; Student Volunteer at ICSE 2024, ICSME 2023, ESSEC 2024
- Apache OODT Project Management Committee (PMC) Member & Committer 2021–2023