

# Kolitha Warnakulasooriya

Software Engineer

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Portfolio: [kolithawarnakulasooriya.github.io](https://kolithawarnakulasooriya.github.io)

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Github: [github.com/kolithawarnakulasooriya](https://github.com/kolithawarnakulasooriya)

## SUMMARY

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Results-driven Software Engineer, Product with over 5 years of experience in scalable, high-performance, full-stack web and mobile application development. Proficient in React, React Native, JavaScript, TypeScript, and modern front-end frameworks. Experienced in full-stack development using Node.js and Java Spring Boot. Adept at agile development methodologies and CI/CD practices to deliver robust applications.

## EDUCATION

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**University of South Alabama | Mobile, Alabama**

Expected 05/2025

Doctor of Philosophy (Ph.D.), Computing, Computer Science (Defended) | GPA: 3.91

**University of Moratuwa | Colombo, Sri Lanka**

07/2018

Bachelor of Science (Hons), Information Technology | GPA: 3.55

## SKILLS

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<b>Languages:</b>	JavaScript, TypeScript, Java, Python, SQL, HTML, CSS, SCSS
<b>Frameworks:</b>	React, React Native, Redux, Webpack, Node.js, Express.js
<b>Test, Cloud &amp; DevOps:</b>	AWS, Docker, Jenkins, Git, GitHub Actions, Jest, Junit, ZenML, MLflow
<b>Database:</b>	PostgreSQL, MySQL, MongoDB, DynamoDB, Redis
<b>Other:</b>	System design, Application development, Algorithm development, Problem-solving, Analytical, and Communication

## PROJECTS

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### **E2E Machine Learning Framework** ([github.com/kolithawarnakulasooriya/e2e-ml-flow](https://github.com/kolithawarnakulasooriya/e2e-ml-flow))

- Developed a Software System framework for end-to-end ML system development using MLFlow and ZenML pipelines, incorporating data ingestion and various statistical analysis techniques.
- Implemented data processing algorithms and data structures for efficient feature engineering and model training, using appropriate design patterns.
- Designed and implemented routing strategies for optimal data flow within the system, considering operating system constraints and resource management.
- Achieved 95% unit test code coverage, demonstrating proficiency in software development best practices and showcasing expertise in algorithms and data structures.

### **MineArc Service App | Freelanced** ([minearc.com/serviceapp](https://minearc.com/serviceapp))

- Developed a hybrid mobile application (Hybrid App Development) using React Native and React for iOS and Android platforms (iOS, Android, Mobile Application) to manage service terms.
- Built a web application (Web Application) front-end using React, integrating with a back-end system, leveraging web technologies (Web Technology) for Software Development.
- Implemented cross-platform mobile features (Mobile Application) for iOS and Android, enhancing user experience.
- Spearheaded the development of a responsive Web Application (Web Application) and Mobile Application (Mobile Application), improving cross-functional collaboration through code reviews, resulting in a 15% reduction in bug reports (Software Development).

## SwarmX SI & MAS Simulator ([github.com/kolithawarnakulasooriya/SwarmX](https://github.com/kolithawarnakulasooriya/SwarmX))

- Developed a Java-based software system, a simulation tool for swarm intelligence optimization algorithms and multi-agent behaviors, incorporating low-latency data structures.
- Implemented 21 built-in SI algorithms and over 40 benchmark test cases using efficient data structures, ensuring optimal simulation performance.
- Designed and executed simulations, analyzing routing strategies and optimizing for low-latency performance within the software system.
- Achieved a 15% reduction in simulation runtime through optimized data structure implementation and efficient routing algorithms, demonstrating proficiency in simulation tool development, data structures, and software system design.

## PROFESSIONAL EXPERIENCE

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### Research Assistant | University of South Alabama | Mobile, Alabama 01/2022 – Present

- Engineered a dynamic leader election algorithm for distributed computing systems, applied to multi-UAV systems, boosting operational **efficiency by 89.7%**.
- Supervised three pivotal UAV research projects, increasing **project completion rates by 25%**.
- Performed comprehensive literature reviews to substantiate research hypotheses, ensuring robust and credible methodologies for machine learning, neural networks, AI, and robotics.

### Lead Engineer (Associate) | SyscoLabs Technologies | Colombo, Sri Lanka 08/2021 – 01/2022

- Promoted to assistant engineering manager for Sysco Shop CRM's core team, leading over 10 engineers to **double team performance**.
- Coordinated agile and scrum processes by planning sprints, conducting daily stand-ups, and managing retrospectives using JIRA software, **reducing team lead overhead by 50%**.
- Managed meeting documentation on Confluence, ensuring software engineering principles clarity and accessibility for all team members.

### Senior Software Engineer | SyscoLabs Technologies | Colombo, Sri Lanka 12/2019 – 08/2021

- Oversaw, maintained, and managed large-scale applications, front-end components, back-end modules, microservices, and databases across production environments in **cloud services like AWS**.
- **Resolved three critical issues** and served as an on-call representative, achieving zero reported production incidents related to managed components.
- Conducted thorough code reviews, debugging, and troubleshooting to ensure best practices and standards in the codebase, product area, systems, and infrastructure.

### Software Engineer | SyscoLabs Technologies | Colombo, Sri Lanka 07/2018 – 11/2019

- Developed responsive web and mobile applications using React, React Native, and ES6, implementing Redux state management utilizing object-oriented programming concepts.
- Designed and implemented **back-end services, RESTful, GraphQL, and Salesforce APIs within a microservice architecture, using Spring Boot and Node.js Express** for efficient data management.
- Reduced **bug occurrences by 90%** through comprehensive unit, component, integration, and end-to-end testing.

## EXTRACURRICULAR

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### Formula 1 – SAE Hybrid Electric Competition Vehicle 12/2024 – 05/2025

- Achieved 3rd place in the hybrid category.
- Appointed as the computer team lead, designed and developed the electronic and computing system to collect, manage, and manipulate ECU, BMS, and motor control over the CAN network.
- Developed the FE application to display real-time data on the dashboard with bidirectional communication over the CAN network.