DIMUTH KARUNARATHNA

Hadigama, Piliyandala, Sri Lanka

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Education

University of Westminster (IIT)	**Jan. 2021 – Jul. 2025**
BEng (Hons) in Software Engineering	*Sri Lanka*

Mahanama College	**Jan. 2019 – Dec. 2020**
G.C.E Advanced Level	*Sri Lanka*

National Institute of Business Management (NIBM)	**Jan. 2018 – Dec. 2019**
Certificate in Software Engineering	*Sri Lanka*

Relevant Coursework

- Machine Learning
- Computer Vision
- Artificial Intelligence
- Data Structures and Algorithms
- Systems Programming
- Software Engineering Principles
- Web Development
- Database Systems

Experience

IFS	**Jul. 2023 – Jul. 2024**
Undergraduate Trainee Software Engineer	*Colombo, Sri Lanka*

- Resolved 40+ functional and technical issues in the IFS Cloud web client, improving customer-reported bug resolution time by 30%.
- Enhanced existing features and engineered 15+ new UI components using Angular and TypeScript, improving UX and reducing load times by 20%.
- Automated 100+ unit tests with Jest and implemented E2E test coverage using Cypress, increasing test coverage from 65% to 90%.
- Executed 12+ release validation cycles, ensuring 99.9% uptime and zero post-release critical bugs.
- Reduced regression bugs by 25% through integration of automated testing in the CI pipeline.

Projects

Accident Anticipation System | *Python, YOLOv8, DeepSORT, OpenCV*	**Jan. 2025 – May 2025**

- Built an ML pipeline analyzing 1,500+ dashcam videos to predict vehicle collisions and trigger airbag deployment with 87% accuracy.
- Implemented real-time object tracking at 30 FPS using YOLOv8 and DeepSORT to enable sub-second safety-critical decisions.
- Extracted 5 spatial-temporal features (speed, angle, brake intensity, density, jerk) and applied linear regression (AUC = 0.89) for accident probability estimation.

SimpleInventory – Veggie Store Manager | *ASP.NET Core, MS SQL, Swagger*	**Mar. 2025 – Apr. 2025**

- Built a full-stack CRUD system managing 100+ inventory items with backend APIs and a dynamic JS frontend.
- Integrated Swagger (OpenAPI) documentation, improving API testing speed and reducing integration time by 40%.

BookNestAPI | *ASP.NET Core, Entity Framework Core*	**Apr. 2025 – May 2025**

- Designed and deployed RESTful APIs managing 500+ book records with filtering, pagination, and SQL + in-memory support using EF Core.
- Documented endpoints using Swagger UI, enabling seamless integration for 2 frontend developers.

Technical Skills

Languages: Python, Java, JavaScript, TypeScript, Dart, SQL/MySQL, C#, ASP.NET Core
Frontend: Angular, HTML5, CSS3, Flutter
DevOps & APIs: Docker, Bitbucket, SVN, Git, JIRA, Swagger, OpenAI/Gemini APIs, Streamlit
ML/AI: Scikit-learn, NLP, YOLOv8, DeepSORT, Logistic Regression, Naive Bayes, Linear Regression
Testing: Jest, Cypress, Automated Release Validation

Publications

- **Vision Based Airbag Deployment System** – MERCon 2025

- **Driving Safety Innovation: ML-Powered Airbag Systems** – 8th IRCSCSE

Leadership & Volunteering

Mozilla Campus Club of IIT   **Jan. 2021 – Present**
Volunteer   *Sri Lanka*

Rotaract Club of IIT   **Jan. 2021 – Present**
Volunteer   *Sri Lanka*