DIMUTHU WIJESIRIWARDENE

ROBOTICS & AUTONOMOUS SYSTEMS RESEARCHER

MOBILE ROBOTICS • PERCEPTION & CONTROL

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Location : Colombo, Sri Lanka

• Application Engineer	Synopsys, Inc.	Jun 2022 - Present
• Graduate Research Assistant	Faculty of Engineering University of Sri Jayewardenepura Colombo, Sri Lanka	Oct 2021 - Jun 2022
• Associate Software Engineer	Insharp Technologies Pvt. Ltd. Colombo, Sri Lanka	Aug 2020 - Oct 2021
• Undergraduate research assistant (Internship)	Sustainable Computing Research Group(SCoRe Lab) University of Colombo School of Computing Colombo, Sri Lanka	Nov 2017 - Jan 2018

PROFESSIONAL BACKGROUNDACADEMIC BACKGROUND

• Bachelor's degree o BEng (Hons) Electrical and Electronic Engineering Upper Second Class Honours	Curtin University Perth, Australia	Jan 2016 - Feb 2020
• GCE Advanced Level o Physical Science Stream o Math, Physics & Chemistry	Dharmapala Vidyalaya Pannipitiya Colombo, Sri Lanka	Jan 2011 - Sep 2014

PROJECTS

- NovasPlay - Omnidirectional Soccer robot (Demo Video)
  - Built a remote-controlled omnidirectional soccer playing robot featuring a custom dribbling mechanism
  - Modeled the robot in Autodesk Fusion, fabricated it using laser-cut sheet metal and 3D-printed components, assembling them into a functional robot
  - Achieved a 5-1 victory in the initial competition round - Competition project at Synopsys (2024)
- Fire rescue assisting robot
  - Designed a thermal vision based system for human detection in a smoke filled environments using low cost sensor mounted on a UGV/UAV
  - Final year individual research project at Curtin University (2019)
- Reverse Vending Machine (Demo Video)
  - Designed and simulated a 3D model of a reverse vending machine in Blender and built a working prototype
  - A research project at the University of Sri Jayewardenepura in collaboration with industry partner OREL Corporation (Pvt.) Ltd. (2022)
- Low-cost reflectometer
  - Designed and built a low-cost time-domain reflectometer to locate faults in cables as part of a human-elephant conflict mitigation system - Research project at SCoRe Lab (2017)
- Fence energizer reverse engineering
  - Reverse engineered the GALLAGHER B180 Multi Power Fence Energizer to build a low-cost energizer as a part of a research project at SCoRe Lab (2017)
- 3D printed quadruped robot
  - Built a four-legged robot as a part of a research project at SCoRe Lab (2018)

- Verdi - Debug and Verification Management Platform
  - Performed incoming bug analysis, root cause analysis, and validation of new features and enhancements for customers such as Apple, Intel, NVIDIA, AMD, etc.
  - Developed test automation solutions using AI-Driven testing methodologies and scripting; contributed new regression tests to the regression suite, improving verification coverage and quality assurance processes
  - PV owner of Verdi Transaction Debug component with quality assurance and signoff responsibilities
  - Worked with Synopsys VIP designs & UVM, performing tool specific testing - Project at Synopsys

- VCS - Verilog Compiled Simulator
  - Validated and debugged VCS Intelligent Coverage Optimization (ICO), an AI/ML driven technology for accelerating functional coverage closure in semiconductor verification
  - Validated the integration of ICO with Verdi RDA (Regression Debug Automation), enabling customers to identify faulty code and traces more effectively - Project at Synopsys

- Euclide - Real-Time Hardware Development and Verification IDE
  - Validation and verification of new features and enhancements of the RTL tool
  - Analyzed customer bugs and identified root causes - Project at Synopsys

- jTerm - Efficient Jira creation tool
  - Developed a tool to create Jiras without workflow interruptions, with built-in support for screenshots and annotations via the in-house tool *Snipper*, and globally utilized with 500+ Jiras created to date
  - Presented at the internal poster presentation event (“Purple Poster Event”, 2025) at Synopsys

- jCrash - Streamlined crash reporting tool
  - Built a tool to report application crashes instantly by executing a single command
  - Awarded third place in the 2024 Innovations Award at Synopsys
  - Presented at the internal poster presentation event (“Purple Poster Event”, 2024) at Synopsys

- gCron - Crobjob manager
  - Built an intuitive interface for cron job management with natural-language scheduling, real-time previews and backup support; adopted by teams globally
  - Presented at the internal poster presentation event (“Purple Poster Event”, 2026) at Synopsys

- weGen - All-in-one weekly report generator
  - Built a unified interface to update project statuses, manage tasks and generate weekly progress reports
  - A Project at Synopsys (2025)

- Perftest - An automated script for performance testing with multiple customer designs
  - Recognised for streamlining the process of manual performance testing - Project at Synopsys (2024)

- Cdiff - Customised diff command
  - Recognised in the Innovations Awards - Project at Synopsys (2023)
- TuTi - Virtual Classroom
  - Full stack development - Project at Insharp Technologies (2021)
- Retailz - Data analytics tool for supermarkets and suppliers
  - Full stack development - Project at Insharp Technologies (2020)
- The Wind Turbine (Demo Video)
  - Presenter and team member
  - Project for Principles and Communication module at the university (2016)

- The Automated Bedsheet (Demo Video)
  - Engineered a solution from initial idea through conceptual design to a functional prototype as project lead
  - Researched, designed and fabricated custom stepper motor drivers from scratch, reducing the cost by 85%
  - Presented at the university engineering exhibition (“Young Engineering Expo”, 2016)

TECHNICAL SKILLS

- Programming & Software
  - Python, C, Shell scripting (Csh, Bash), Tcl
  - Version control (Git)
  - Linux (Ubuntu, Raspbian)
  - AI-assisted development
  - Prompt engineering
- CAD, Design & Fabrication
  - Autodesk Fusion, Blender,AutoCAD, SolidWorks
  - 3D printing(PLA, ABS, TPU, TPE), sheet metal fabrication (laser cutting)
  - Mechanical assembly; workshop tools (drills, saws, sanders, compressors)
- Computer Vision, Simulation & Numerical Tools
  - OpenCV, pandas, NumPy, SciPy
  - MATLAB
  - Godot Engine
- Validation, Verification & Quality Assurance
  - Synopsys VCS, Verdi (Simulation, Debugging)
  - Root Cause Analysis, Jira
  - Selenium, Test Planning
  - AI-based test case creation agents
- Embedded Systems & Robotics
  - Raspberry Pi, Arduino, PIC, MSP430, PLC
  - Sensors, actuators
  - Robot Operating System (ROS 2)
  - Hardware interfacing
  - I2C, SPI, UART, PWM
- Electronics & PCB Design
  - Circuit simulation: NI Multisim, Proteus
  - PCB design: Eagle PCB
  - PCB manufacturing: toner-transfer method
  - PCB reverse engineering
  - Oscilloscopes, Multimeter, Soldering
- Web & Software Development
  - Django, Laravel
  - HTML, CSS, JavaScript, Vue.js
  - Blockchain (Smart contracts, Solidity)
- Technical Communication & Media
  - Poster presentation
  - Technical demonstrations
  - Video production
  - Video editing (Adobe Premiere Pro)

Awards, Presentations & Recognitions

- 2026 - Presenter, Purple Poster Event (gCron)
- 2025 - Presenter, Purple Poster Event (jTerm)
- 2024 - 3rd Place, Synopsys Innovations Award (jCrash)
- 2024 - Presenter, Purple Poster Event (jCrash)
- 2024 - Competitor, Synopsys RoboCup Competition (NovasPlay - Demo Video)
- 2016 - Presenter, Young Engineering Expo (Automated Bedsheet - Demo Video)

Publications

- Dimuthu Wijesiriwardene and Rohana Thilakumara. “Human Detection for Fire Rescue Robots Using a Thermal Sensor and Hu Moment Invariants.”, Manuscript submitted to *IEEE International Conference on Electrical Engineering and Emerging Technologies (ICEEET), 2026.*

References

Dr. Udaya Wijenayake
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14th of April 2026 Dimuthu Wijesiriwardene