

ABIRAMI BASKARAN

(+65) 9661 5132 • i.am.abirami.baskaran@gmail.com • [linkedin.com/in/abibas](https://www.linkedin.com/in/abibas) • [portfolio website](#) • Singaporean

WORK EXPERIENCE

Defence Science Technology Agency (DSTA) – Land Systems

Jun 2025 – Aug 2025

Robotics Engineer Intern (ROS2, Radio Communication, wireless video streaming, 3D modelling)

Singapore, SG

- Contributed to a national-level project for NDP 2025, integrating mechanical design, 3D modelling, and software development with user-friendly updates.
- Independently implemented wireless video transmission across both local network and radio communication for reliable real-time streaming.
- Gained hands-on experience through self-learning and experimentation, combining robotics, communication systems, and mechanical concepts effectively

Singapore Polytechnic – Digital Twinning Systems

Mar 2024 – Jun 2024

Research Assistant (Power engineering, Machine Learning Algorithm, Artificial Intelligence, Digital Twin)

Singapore, SG

- Spearheaded the development of a digital twin and self-correction algorithm for Brushless DC motors to enhance system accuracy and performance.
- Conducted extensive research on motor behaviour and applied findings to create an integrated application for real-time monitoring and analysis.
- Took on extended responsibilities by planning project schedules and onboarding new interns to support ongoing research activities.

Singapore Polytechnic – Digital Twinning Systems

Sep 2023 – Feb 2024

Software & AI Engineer Intern (Digital Twin, Electric Vehicle Batteries, Neural Network, Web development)

Singapore, SG

- Developed a Digital Twin-based Battery Management System (BMS) for Electric Vehicle batteries, integrating AI with power engineering concepts to enhance fault detection and monitoring.
- Designed and implemented algorithms that improved fault detection accuracy from 87% to nearly 100%, enabling more reliable system diagnostics.
- Self-learned power technology fundamentals to bridge computing and electrical engineering, creating a 3D visual application for real-time battery performance tracking.

IT Block – Tech Support

Jan 2022 – Jul 2022

IT Technician Intern (IT Hardware & Software Support, Research Skills)

Singapore, SG

- Provided IT support and troubleshooting services to assist clients in resolving technical issues efficiently.
- Conducted research and critical analysis to identify and implement effective solutions for system improvements.
- Submitted weekly security reports and coordinated product deliveries, ensuring smooth operations and client satisfaction.

EDUCATION

National University of Singapore

Aug 2024 - May 2027

Bachelor of Engineering, Electrical Engineering with Minor in Computing

- Coursework: Digital Design, Machine Learning, Data Structure Algorithm, Electrical Energy Systems, ...

Singapore Polytechnic

Apr 2022 - Mar 2024

Diploma in Computer Engineering, Specialised in Computer Application

- Coursework: DevOps, OOP, DSA, MLAI, Client Server & Mobile Application Dev, Embedded Computer, Microprocessor, ...

Institute of Technical Education

Jan 2020 – Mar 2022

Higher Nitec in Electronics Engineering

- Coursework: Digital & Analogue Principles & Applications, Electrotechnology, Advanced Applied Electronics, ...

PROJECTS & ACHIEVEMENTS

Best Freshmen Hack in Hack&Roll (24-hour hackathon)

2025

- Built a robotic companion with image and speech recognition to assist users in exercising by following their actions and providing motivational feedback.

First Prize Winner in NTU Deep Learning Week (4 days hackathon)

2024

- Developed an application employing machine learning and computer vision to detect presentation habits, predict emotions through voice modulation, and deliver personalised feedbacks with generative AI.

Championship in Dell InnovateFest (Inaugural Competition)

2023

- Developed a Mobile Application with Augmented Reality, real-time chat, and a unique interface catered towards people with intellectual disability (PWID). With support from M.I.N.D.S, the app was suitable for use and encourages PWID to socialise and play sports.

People's Choice Award in Samsung Solve For Tomorrow (Top 5 Finalist)

2022

- Built a well-rounded robotic bear controlled by a mobile app for paediatric children. With a pulse and thermal sensor nurses can monitor and with a real time voice communication, parents can speak with their child while working.

LEADERSHIP

NUS ECE Undergraduate Student Council – President

Aug 2020 – Present

- Overseeing a team to plan and execute academic, social, and community initiatives for over 1,000 students.
- Developed and implemented strategies to enhance student engagement

TECHNICAL SKILLS AND TOOLS

Programming languages/frameworks: Python, Java, PHP, Assembly, Verilog

Technical Skills: Data Structure Algorithm, Object Oriented Programming, Web & Mobile Development, Artificial Intelligence, IOT, Microcontroller Applications, Embedded Systems, Computer Interfacing, Data Engineering, FPGA System

Tools: Pandas, Numpy, Flask, MongoDB, Computer vision, Autodesk Fusion 360

Certifications: IOT, Docker Fundamentals, Kubernetes Fundamentals

Certified: Google IT Support