ABIRAMI BASKARAN

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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 **Jun 2021 – Aug 2021**
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 Deb, Embedded Computer, Microprocessor, …

Institute of Technical Education College Central **Jan 2020 – Mar 2022**
Higher Nitec in Electronics Engineering

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

PROJECTS & ACHEIVEMENTS

***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, FPG System
Tools: Pandas, Numpy, Flask, MongoDB, Computer vision, Autodesk Fusion 360
Certifications: IOT, Docker Fundamentals, Kubernetes Fundamentals
Certified: Google IT Support