

# ABIRAMI BASKARAN

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## WORK EXPERIENCE

<b>Defence Science Technology Agency (DSTA) – Land Systems</b> <i>Robotics Engineer Intern (ROS2, Radio Communication, wireless video streaming, 3D modelling)</i>	<b>Jun 2025 – Aug 2025</b> Singapore, SG
<ul style="list-style-type: none"><li>Independently worked on a project with national-level contribution (NDP 2025),</li><li>Experience includes, integrating mechanical design, 3D modelling, and software development with user-friendly updates.</li><li>Independently implemented wireless video transmission across both local network and radio communication for reliable real-time streaming.</li><li>Gained hands-on experience through self-learning and experimentation, combining robotics, communication systems, and mechanical concepts effectively</li></ul>	
<b>Singapore Polytechnic – Digital Twinning Systems</b> <i>Research Assistant (Power engineering, Machine Learning Algorithm, Artificial Intelligence, Digital Twin)</i>	<b>Mar 2024 – Jun 2024</b> Singapore, SG
<ul style="list-style-type: none"><li>Spearheaded the development of a digital twin and self-correction algorithm for Brushless DC motors to enhance system accuracy and performance.</li><li>Conducted extensive research on motor behaviour and applied findings to create an integrated application for real-time monitoring and analysis.</li><li>Took on extended responsibilities by planning project schedules and onboarding new interns to support ongoing research activities.</li></ul>	
<b>Singapore Polytechnic – Digital Twinning Systems</b> <i>Software &amp; AI Engineer Intern (Digital Twin, Electric Vehicle Batteries, Neural Network, Web development)</i>	<b>Sep 2023 – Feb 2024</b> Singapore, SG
<ul style="list-style-type: none"><li>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.</li><li>Designed and implemented algorithms that improved fault detection accuracy from 87% to nearly 100%, enabling more reliable system diagnostics.</li><li>Self-learnt power technology fundamentals to bridge computing and electrical engineering, creating a 3D visual application for real-time battery performance tracking.</li></ul>	
<b>IT Block – Tech Support</b> <i>IT Technician Intern (IT Hardware &amp; Software Support, Research Skills)</i>	<b>Jun 2021 – Aug 2021</b> Singapore, SG
<ul style="list-style-type: none"><li>Provided IT support and troubleshooting services to assist clients in resolving technical issues efficiently.</li><li>Conducted research and critical analysis to identify and implement effective solutions for system improvements.</li><li>Submitted weekly security reports and coordinated product deliveries, ensuring smooth operations and client satisfaction.</li></ul>	

## EDUCATION

<b>National University of Singapore</b> <i>Bachelor of Engineering, Electrical Engineering with Minor in Computing</i>	<b>Aug 2024 - May 2027</b>
<ul style="list-style-type: none"><li>Coursework: Digital Design, FPGA, Machine Learning, Data Structure Algorithm, Electrical Energy Systems, ...</li></ul>	
<b>Singapore Polytechnic</b> <i>Diploma in Computer Engineering, Specialised in Computer Application</i>	<b>Apr 2022 - Mar 2024</b>
<ul style="list-style-type: none"><li>Coursework: DevOps, OOP, DSA, MLAI, Client Server &amp; Mobile Application, Embedded Computer, Microprocessor, ...</li></ul>	
<b>Institute of Technical Education College Central</b> <i>Higher Nitec in Electronics Engineering</i>	<b>Jan 2020 – Mar 2022</b>
<ul style="list-style-type: none"><li>Coursework: Digital &amp; Analogue Principles &amp; Applications, Electrotechnology, Advanced Applied Electronics, ...</li></ul>	

## PROJECTS & ACHIEVEMENTS

<b>Best Freshmen Hack in Hack&amp;Roll (24-hour hackathon)</b>	<b>2025</b>
<ul style="list-style-type: none"><li>Built a robotic companion with image and speech recognition to assist users in exercising by following their actions and providing motivational feedback.</li></ul>	
<b>First Prize Winner in NTU Deep Learning Week (4 days hackathon)</b>	<b>2024</b>
<ul style="list-style-type: none"><li>Developed an application employing machine learning and computer vision to detect presentation habits, predict emotions through voice modulation, and deliver personalised feedback with generative AI.</li></ul>	
<b>Championship in Dell InnovateFest (Inaugural Competition)</b>	<b>2023</b>
<ul style="list-style-type: none"><li>Developed a Mobile Application with Augmented Reality, real-time chat, and a unique interface catered towards people with intellectual disability (PWD). With support from M.I.N.D.S, the app was suitable for use and encourages PWD to socialise and play sports.</li></ul>	
<b>People's Choice Award in Samsung Solve For Tomorrow (Top 5 Finalist)</b>	<b>2022</b>
<ul style="list-style-type: none"><li>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.</li></ul>	

## LEADERSHIP

<b>NUS ECE Undergraduate Student Council – President</b>	<b>Aug 2025 – Present</b>
<ul style="list-style-type: none"><li>Overseeing a team to plan and execute academic, social, and community initiatives for over 1,000 students.</li><li>Developed and implemented strategies to enhance student engagement</li><li>Project Director for NUS ECE Internship &amp; Career Fair 2026</li></ul>	

## TECHNICAL SKILLS AND TOOLS

<b>Programming languages/frameworks:</b> Python, Java, PHP, Assembly, Verilog, C++	
<b>Technical Skills:</b> Data Structure Algorithm, Object Oriented Programming, Web & Mobile Development, Artificial Intelligence, IOT, Microcontroller Applications, Embedded Systems, Computer Interfacing, Data Engineering, FPG System	
<b>Tools:</b> Pandas, NumPy, Flask, MongoDB, Computer vision, Autodesk Fusion 360	
<b>Certifications:</b> IOT, Docker Fundamentals, Kubernetes Fundamentals	
<b>Certified:</b> Google IT Support	