Dhyan Shyam

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Personal Profile

I have a solid academic background paired with hands-on experience in robotics, AI, and embedded systems. I develop practical solutions by integrating advanced programming, control systems, and machine learning to solve real-world challenges. My work in R&D, IoT, and automation has sharpened my problem-solving skills and deepened my commitment to innovation. I'm passionate about building systems that make a tangible impact and continuously improving through learning and collaboration.

Education

MSC (HONS) ROBOTICS AND AI, UNIVERSITY COLLEGE LONDON – LONDON | SEP 2024 – PRESENT |

- Completed Modules: Machine Learning, Estimation and Control, Computer Vision and Sensing, Modelling and Motion Planning. On track for a Distinction.
- Gained foundational knowledge in supervised and unsupervised learning, built and trained neural networks using PyTorch, and developed predictive models in Python.
- Implemented PID and Model Predicitive Control (MPC) strategies, developed state estimation methods (e.g., Kalman Filters), and utilised Python-based simulations (Pinocchio and PyBullet)
- Utilised Python, Jupyter Notebooks, and OpenCV for image processing, feature detection, and real-time vision-based tasks.
- Deployed ROS for system integration, formulated and analysed forward and inverse kinematics, and built motion planning algorithms to optimise robotic path execution.
- Current Modules: Robot Vision and Navigation, Legged Robotics, Soft Robotics, Robotic Sensing, Manipulation, and Interaction

BENG (HONS) ROBOTICS, UNIVERSITY OF PLYMOUTH - PLYMOUTH, DEVON | SEP 2020 – MAY 2024 |

- Achieved a First Class Honours with an Aggregate Final Mark of 81.03%. Awarded the Tony Rees Memorial Award for Best Application of Technological Skills and the Institution of Engineering and Technology Prize for Best Student on an Accredited Course.
- Embedded Systems and Electronics: Proficient in C/C++, FPGA/Verilog, and Proteus for designing reliable embedded systems and testing complex analogue/digital circuits using lab equipment.
- Robotics and Control Engineering: Designed and built innovative robotic systems using Fusion 360 and Onshape, MATLAB, and advanced algorithms, integrating sensors and applying 3D printing, soldering, and wiring techniques.
- Mathematics and Statistical Analysis: Strong foundation in engineering mathematics, excelling in problem-solving, statistical analysis, and system optimisation.
- Bachelors Project - Low-Cost IoT Water Quality Monitoring System
  - Designed a cost-effective system using LoRaWAN and IoT to measure pH, turbidity, TDS, temperature, and light intensity.
  - Integrated ESP32 microcontroller, modular 3D-printed housing, and GPS for real-time monitoring and precise localisation.
  - Achieved 12.4 km communication range (P2P LoRa), with data visualization via Datacake.
  - Reduced costs to 1/10th of traditional systems, enabling scalable deployment in agriculture, wastewater, and drinking water applications.

Professional Experience

5G R&D INTERN | KEYSIGHT TECHNOLOGIES - FLEET, HAMPSHIRE | JUL 2022 – SEPT 2023 |

- Proficient in C/C++ programming through developing a console application streamlining the work process for developers and testers by automating the parsing of large XML data files containing UE (User Equipment) Capability information for improved efficiency and significant time savings.
- Applied Agile software development methodologies in a collaborative team environment, contributing to the development of streamlined processes and the successful delivery of projects and ensuring effective communication and coordination.
- Acquired advanced Python programming skills through the creation of a desktop application integrating a VNA and 6-Switch Matrices, enabling rapid automated data extraction of S-Parameters and storing these data files to implement graphing capabilities for comprehensive analysis and data visualisation.
- Developed strong problem-solving abilities by devising efficient solutions to improve testing efficiency and accuracy.
- Enhanced technical proficiency with hands-on experience with advanced test equipment, including various types of VNA and Switch Matrices as well as working with multiple passive and active DUTs (Device Under Test).
- Bridged the gap between software and hardware development, cultivating a diverse skill set and comprehensive understanding of the end-to-end product development process.

Teaching and Tutoring Experience

TUTOR | MYTUTOR – BASINGSTOKE | APR 2022 – PRESENT

- Delivered over 500 Maths, Physics, and Chemistry tutoring sessions (KS3, GCSE, A-Level)
- Adapt lessons to various learning styles, strong communication and problem-solving skills
- Balance tutoring responsibilities with full-time work/university; maintain high satisfaction rates

TEACHING ASSISTANT | CODE NINJAS – READING, BERKSHIRE | JUN 2021 – DEC 2021

- Assisted children in developing custom Java programs and taught electronics fundamentals
- Successfully navigated and comprehended custom programs, efficiently troubleshooting coding challenges to ensure a seamless learning experience.
- Assumed leadership responsibilities and trained new employees, created workshops using Minecraft for storytelling, and fostered creativity

TEACHING ASSISTANT | KUMON – BASINGSTOKE, HAMPSHIRE | MAR 2019 – MAR 2020

- Led Maths and English sessions tailored to individual learning levels
- Improved rapport through effective conflict resolution with both students and parents

Hobbies + Interests

- Fluent in English and Kannada.
- Professional Affiliation: Student member of the IET (Institution of Engineering and Technology).
- Interested in Cricket, Formula 1, Travel and Cooking.