Anomitra Mukhopadhyay

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PERSONAL STATEMENT

Enthused by the development of robotic technology in current times with a particular focus on industrial robots became the reason behind pursuing a bachelor's degree in Mechatronics Engineering and a master's degree in Robotics. With practical experience in robotics, electronic systems, simulations and CAD software, potentially carried out research projects in the field of industrial robots. Effective communicator with professional efficiency in English. Competent in robotics and carrying forward the work and research of potentially developing robots. Proven strengths include a strong work ethic, problem-solving skills and the ability to deliver results on time.

KEY ACHIEVEMENTS

- Awarded £ 2150 scholarship by Cranfield University
- Successfully completed robot obstacle detection and avoidance in a static and dynamic environment
- Using the concepts of soft robotics, successfully designed and developed a soft actuator
- Using the concepts of machine vision, developed a smart system that would detect the drowsiness of a driver and would induce an alarm or braking system to prevent an accident
- Using Machine Learning and traditional robot path planning algorithms, successfully developed a hybrid navigation and path planning approach for complex static and dynamic environments

EDUCATION (View my projects here*: https://github.com/anomitra18/anomitramukhopadhyay.git*)

MSc Robotics: Cranfield University, Cranfield, UK (September 2021 - September 2022)

- **Modules**: Fundamentals of Robotics, Robotics Control, AI and ML for Robotics, Human-Robot Interaction, Programming Methods in Robotic, Machine Vision in Robotics, Autonomy in Robotic Systems
- **Group Project**: *'Robot Room Service'.* The project aims to develop a reliable method for service robots to perform room service jobs in a hotel environment
- **Individual Project**: *'Hybrid-Framework for Multi-Robot Collision Avoidance'.* The thesis aims to identify how robot path planning and obstacle avoidance in a dynamic environment could be made much more optimised and promising using the combination of Machine Learning with already available traditional approaches

B. Tech. Mechatronics: SRM Institute of Science and Technology, Chennai, Tamil Nadu (May 2017 - May 2021)

- **Modules**: Digital Systems and Microprocessors, Electrical Machines and Actuators, Fluid Power Systems and Automation, Fundamentals of Machine Design, Fundamentals of Robotics, Industrial Electronics,Linear and Digital Control Systems, Machine Vision and Image Processing, Microelectromechanical Systems, Microcontrollers, Mobile Robotics, Sensors and Signals Conditioning, Solid State Devices and Circuits
- **Minor Project**: *'Design and Development of Soft Actuators'.* The project aims to develop a soft actuator that can perform multi-directional linear actuation
- **Minor Project**: *'Design and Development of Crawling-Rolling Mechanism of a Robot'.* The research project aims to develop a land robot that can crawl on uneven terrains and roll on smooth surfaces despite different environmental constraints
- **Major Project**: *'Design and Development of Mobile Manipulator for Warehouse Application'*. The project focuses on developing an autonomous mobile robot with a manipulator performing pick and place operations in warehouses or sorting centres

CAREER HISTORY

Carl Zeiss Microscopy Ltd: Cambridge, United Kingdom (30th May 2023)- Final Test Engineer

One of the top tech firms in the world is the ZEISS Group. It has a well-balanced portfolio that is focused on the optics, precision mechanics, and optoelectronics industries' promising future markets. The Corporation has been influencing technical advancement for more than 175 years by expanding the field of optics with products from its four areas and satisfying the needs of its customers.

- Working on different High-Resolution Field Emission Scan Electron Microscopes (FE-SEMs) Manufactured, Assembled and Tested by the High-Quality Imaging and Advanced Analytical Microscopy section of Carl Zeiss, the pioneer of science in optics and optoelectronics. Final testing of all the High Precision aspects, before it's delivered to the customer
- Skills gained: Mechanical Testing, Electronic Testing, Electron Optics, Automated Software Testing, High Precision Testing, Automation, Mechatronics

EXTRAMURAL COURSES

Bharat Heavy Electrical Ltd: Hyderabad, Telangana – Academic Training (June 2019 - July 2019)
Bharat Heavy Electricals Limited (BHEL) is an engineering and manufacturing company. The company is an integrated power plant equipment manufacturer which is engaged in designing, engineering, manufacturing, constructing, testing, commissioning, and servicing a range of products and services for various sectors, such as power, transmission, industry, transportation, renewable energy, defence, oil and gas.

- Mentored by on-site engineers on the introduction to the power distribution process and manufacturing of various electrical machines. Experience working on power generating techniques such as solar panels, hydroelectric power

Internshala: Chennai, Tamil Nadu – Academic Training (January 2019 - February 2019)
Internshala is a technology company on a mission to equip students with relevant skills & practical exposure to help them get the best possible start in their careers. Imagine a world full of freedom and possibilities.

- Experienced virtual training on the Internet of Things presenting the basics of IoT and its frequent applications in industries. Created projects based on IoT for example, Plant Monitoring System and fluctuating LED brightness using Pulse Width Modulation

Electronics Platform Research Labs: Chennai, Tamil Nadu – Academic Training (August 2018 - October 2018)
Electronics Platform Research Labs is a research and development organisation incorporated to provide fantastic platforms for students and embedded engineers around the globe.

- Practical experience in developing embedded systems from scratch using microcontrollers and different programming languages. Designed and developed a mobile robot from scratch

Association of Mechatronics Engineers (AME): Chennai, Tamil Nadu – Technical Team Member (May 2018 – May 2021) AME is a small but very powerful student-led organisation that helps newcomers to know the purpose of mechatronics engineering, and its future opportunities. AME also helps new learners to improve the fundamentals of mechatronics by conducting interactive presentations and hands-on practical sessions.

- As a technical team member worked closely on different projects and gathered hands-on experience. Hosting several interactive teaching sessions helped enhance technical writing, presentation, and research skills. Diligence in oratory and technical knowledge organised interactive seminars on topics such as "Mechatronics and its scope" and "Robot Control System". Co-conducted workshops on software like SOLIDWORKS and MATLAB

SKILLS, INTERESTS & EXTRACURRICULAR ACTIVITIES

- **Languages-** Bengali, Hindi, English
- **Software Skills-** Robot Operating System (ROS), Gazebo, Rviz, Python, SolidWorks, AutoCAD, FluidSim, LabVIEW, MATLAB & Simulink, Unity 3D, ABB RobotStudio, Visual Studio, Arduino IDE, TensorFlow, Microsoft Office
- **Interests-** Industrial Robotic Manipulators, Mobile Robots, Medical Robots, Soft-Robotics, Biomimetics, Mechatronics, Embedded Systems, Internet of Things(IoT), Machine Learning
- **Extracurricular Activities-** Video Editing, Photoshop, Football, Table Tennis, Badminton, Photography, Anchoring and Oration
- **Membership-** Technical team member of Association of Mechatronics Engineers (AME), member of National Service Scheme (NSS)