Siddarth Bramarambika Shankar

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About Me

- Enthusiastic Robotics and Automation Engineer with a robust background in designing and implementing advanced mobile and articulated robotic systems, as well as industrial automated solutions. My expertise spans machine learning domains, including machine vision and multi-agent systems, alongside industrial specialties such as control systems, modeling, simulation, and optimization of physical systems.
- Experienced Quality Engineer in the electric vehicle manufacturing industry, having successfully led the company to achieve ISO 9001:2015 certification.

Work Experience

Wien Work, (TU Vienna) **Mar 2024 – Present**
Master Thesis *Vienna, Austria*

- Work is aimed at creating instructive assistive systems coupled with an Intuitive user interface for inclusive production systems and improving user experience.
- **User interface:** Developing an intuitive web-based application using Django and incorporating WCAG and considering usability heuristics.
- **Assistive systems:** Developing an assistive system with user-centric design considerations, and ethical and safety considerations to achieve a high-quality production environment with improved user satisfaction.

Starya Mobility Pvt. Ltd **September 2021 – Aug 2022**
Quality Engineer *Bangalore, India*

- **ISO Certification:** Successfully led the quality team to achieve ISO 9001:2015 certification through meticulous documentation and effective quality improvement strategies.
- **Statistical Process Analysis:** Implemented SPC, Regression Analysis, CAPA analysis Documentation formulation for 5 subsystems of Electrical Retrofit kits improving 30% Quality
- **Product Procurement:** Managed the procurement and maintenance of products and instruments, including measuring instruments and between-centers balancing machines, significantly enhancing company valuation.

Projects

Robot design and Machine Vision **September 2023 – February 2024**

- Joint designing, product selection, path planning, kinematic and dynamic load analysis of ARM and legged mobile robot.
- Feature detection, Image Stitching, Visual Odometry, deep learning Image classification, Camera Calibration using OpenCV and Python Programming.

Haptic Interface and Human-Robot Interaction **September 2022 – December 2022**

- Haptic device (3D Systems Touch X) interfacing with UR3e Cobot and Pybullet (Physics Robot Simulation package) using API and Parallelizing Python programs for Human-Robot Interaction
- Designed the experiment and evaluated the user experience of a robotic teleoperation system across varying task complexities.
- Designed and conducted a scientific study on user experience also using ROS and Unity.

Ergonomics Evaluation and Improvement **November 2023 – May 2023**

- Analysed and made improvements to the ergonomics of a work process of fan haul assembly using RULA and EAWS ergonomic analysis methods. Further validated it using Ema-imk and Seimens Technomatix software.

Education - Master's Degree

European Institute of Technology - Manufacturing **Sept 2022 – Present**
Dual Masters Degree program - People and Robots of Sustainable Work *Switzerland & Austria*

Pursuing a dual degree master's program in Automation and Robotics Systems offered by the European Institute of Technology - Manufacturing. This program, conducted at two different universities, is designed to meet the evolving needs of the industry and workforce.

Exit University - Technical University of Vienna.

Entry University - University of Applied Sciences and Arts of Southern Switzerland.

Technical University of Vienna **Sept 2023 – Present**
Master of Science in Manufacturing and Robotics *Vienna, Austria*

- Assistance systems in Manufacturing
- Digital Simulations of Ergonomics and Robotics
- Machine vision
- Robot Challenge
- Cobot Studio
- Machine Vision

University of Applied Sciences and Arts of Southern Switzerland - SUPSI **Sept 2022 – Sept 2023**
Master of Science in Mechatronics and Automation - ***Grade:*** *5.07/6* *Lugano, Switzerland*

- Integrated Automation
- Industrial Control
- Multi-agent systems
- Applied Statistics and Data Analysis
- Advanced Robotics
- Industrial Robotics
- Autonomous Planning and Acting for Robots
- Modeling, Simulation and optimisation

Education - Bachelor's Degree

BMS Institute of Technology **Aug 2017 – Aug 2021**
Bachelor of Engineering in Mechanical Engineering - ***CGPA:*** *8.21/10* *Bangalore, India*

- Control Engineering
- Basics of Robotics
- Applied electronics
- Mechatronics
- Artificial Intelligence (AI)
- Strength of Materials
- Kinematics of Machines
- Design of Machines

Achievements

***1st place*, CirculoDev - Circular Economy, UCD Dublin** **Jul 2023 – Aug 2023**
CircularDev Summer School - University College Dublin *Dublin, Ireland*

∗ Circular Thinking and Market Penetration Strategies for Digital Product Passport for Mondragon cooperation.

***Top 10*, Brain Computer Interaction** **December 2023**
NeuroTechX global hackathon 2023 *Vienna, Austria*

∗ Designed and conducted a study for the automatic detection of damaged products using Gtec's Unicorn BCI headset for secondary segregation using labeling and classification of EEG brain signals data sets.

Skills

- **Robotics:** ROS 1.0 / 2.0, Pybullet, Matlab, Robot design, Pytorch, OpenCV, Unity
- **Programming:** Python, MATLAB, MS Office, CNC programming, PLC programming, Arduino IDE.
- **Process Simulation:** Siemens Technomatix, EMA imk, Robo-DK
- **Machine Vision:** OpenCV, Visual Odometry, Deep Learning Classification.
- **Industrial:** PLC programming, Functional Safety, Risk Analysis, Lean Processes, Basics of PID.
- **Languages**: English (C1: Working Proficiency), German (B1: intermediate Proficiency), Hindi (C1: Working Proficiency), Kannada (Native).