Gautami Golani

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Education

National University of Singapore Jan 2019 - Jan 2020
M.Sc. in Electrical Engineering; Specialization: Control & Automation *Singapore, SG*
- Relevant Coursework: Advanced Robotics, Neural Networks, Linear Systems, Computer Control Systems, Mechatronic Systems, and Industrial Control & Instrumentation.
- Cumulative GPA - 3.9/5.0.

Manipal Academy of Higher Education Sep 2014 - Jun 2018
B.Tech in Mechatronics Engineering; Minor: Robotics and Automation *Dubai, UAE*
- Relevant Coursework: Robot Dynamics & Control, Mechanics of Robotic Systems, Intelligent Controllers, MEMS, Hydraulic & Pneumatic Systems, PLC, Electric Drives, and Theory & Design of Machine Elements.
- Cumulative GPA - 9.82/10.0.

Experience

SonyAI Jun 2022 - Present
Research Intern *Tokyo, Japan*

Control & Simulation Lab, National University of Singapore Mar 2019 - Nov 2019
Graduate Student Researcher (*Supervisor: Prof. Shuzhi Sam Ge*) *Singapore, SG*
- Formulated and implemented new path planning schemes on an omni-directional mobile robot manipulator as part of my master's project.

Emirates Aviation Services, L.L.C Jul 2016
Aircraft Maintenance Intern *Dubai, UAE*
- Executed on-job training of the maintenance cycle for various parts within Piper PA-28-161 & Cessna 172S Aircraft; familiarized with pre-flight inspection procedures to prevent any mishaps.
- Gained overall functional understanding of an aircraft including ignition and navigation systems; subsequently conducted removal, inspection, and installation of the propeller, main gear oleo strut, landing gear, and carburetor.

Projects

Path Planning of Mobile Robot Manipulators Mar 2019 - Nov 2019
Control & Simulation Lab, NUS (*Supervisor: Prof. Shuzhi Sam Ge*) *Master's Project*
- Conceptualized two new path planning schemes (repetitive and non-repetitive with limits) for a mobile manipulator to track certain desired paths and attained discretization of both schemes.
- Generated and analyzed corresponding scheme results against certain parameters, with each proposed scheme exhibiting high performance.
- Tools: MATLAB and Solidworks.

Framework of Repetitive Path Planning and Control for UR5 Manipulator Mar 2019 - May 2019
Control & Simulation Lab, NUS
- Implemented repetitive path planning scheme and computed-torque controller on UR5's manipulator and designed a complete planning and control framework for it.
- Tools: MATLAB, Simulink and Solidworks.

Vision Based Autonomous Assistance Robot using LabVIEW Feb 2018 - Jun 2018
Manipal Centre of Robotics Excellence, MAHE (*Guide: Prof. Royson Dsouza*) *Undergraduate Project*
- Led a team of 3 to build a user-driven robot with an aim of providing directions to different labs & classes in MAHE upon receiving inputs from users.
- Developed a face detection algorithm to identify each user and integrated voice commands & control of motors for giving directions in turn achieving desired results.
- Tools: myRIO, LabVIEW, Arduino IDE, 3D Printing, Autodesk Fusion and CATIA.

Publications

In Preparation

Gautami Golani, Shuzhi Sam Ge and Dongsheng Guo, "Repetitive Planning Scheme for an Omni-directional Mobile Manipulator With Redundancy Resolving Capacity".

Conferences

Royson Dzouza, Anil Sequeira, Marian Jose and **Gautami Golani**, "Damage Inspection & Online Monitoring: A Comparative Study between Aluminium & Composite Plate Structures", *IOP Conference Series: Materials Science & Engineering*, Vol. 22, 2018.

Supplementary Work

Training

Prolific Systems & Technologies Aug 2017 - Sep 2017
Post Graduate Diploma in Industrial Automation *Vadodara, IND*

- Studied hardware components, configurations and instructions of 5 PLCs (Allen Bradley, Siemens, GE-Fanuc, Modicon & Mitsubishi); designed and tested several ladder logic programs along with scaling of PLCs.
- Explored SCADA (Wonderware Intouch) by designing and analyzing programs; worked towards the aspect of communication between SCADA and PLC.
- Inspected drives and carried out interfacing of drives with HMI panels.
- Gathered knowledge and examined DCS (ABB), panel wiring and wireless/GSM technology in brief.

Skills

Programming: Python (Novice), MATLAB, HTML/CSS
CAD: Pro-E/Creo, SolidWorks & Fusion 360
Prototyping: 3D Printing
Open Source Framework: ROS (Novice)
Others: LabVIEW, Wonderware Intouch, & LaTeX
Spoken Languages: English (Full Professional Proficiency), Hindi (Native), Sindhi (Mother Tongue)

Achievements

Academic Excellence

- Academic Topper in Mechatronics Engineering for 3 consecutive years from 2015-2018.

External Courses

- Accepted for Stanford's Code in Place 2021 program on Python programming held between March and April 2021.

Sports

- Best Player in Women's Cricket - MAHE, Dubai for academic year 2015-2016.
- Awarded Certificate of Merit for Showing Exemplary Performance in Sports - DPS, Dubai from 2010 - 2012.
- Part of the Winning Team - Inter School Cricket Tournaments from 2010-2013.
- Participated in Tennis and Football CBSE Clusters – represented DPS, Dubai in 2011.

Extra-Curricular Activities

Competitions (Participation)

- 2nd and 3rd Research Colloquium on Advances in Engineering and IT - MAHE, Dubai in 2017 and 2018.
- Symposium on IOT , ROS Workshop - MAHE, Dubai in 2017.
- ASME MAQUINA Competition - MAHE, Dubai in 2016.

Volunteering

- Student Volunteer - Represented MAHE, Dubai at GETEX (Gulf Education and Training Exhibition) held in Dubai in 2018.
- Student Volunteer - HERE! Arts Carnival held in NUS in 2019.