

Gautami Golani

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EDUCATION

National University of Singapore (NUS), Singapore Jan 2019 - Jan 2020

M.Sc. in Electrical Engineering; Specialization in Control & Automation

Manipal Academy of Higher Education (MAHE), Dubai Sep 2014 - Jun 2018

B.Tech in Mechatronics Engineering; Minor Specialization in Robotics and Automation

Cumulative GPA - 9.82/10.0

EXPERIENCE

Graduate Student Researcher, National University of Singapore Mar 2019 - Nov 2019

Guide: Prof. Sam Ge, Control & Simulation Lab

- Formulated new path planning schemes and implemented them on an omni-directional mobile robot manipulator.

Aircraft Maintenance Intern, Emirates Aviation Services, L.L.C, Dubai Jul 2016

- Executed on-job training of the maintenance cycle for various parts within Piper PA-28-161 & Cessna 172S Aircraft.
- Conducted the removal, inspection, and installation of the propeller, main gear oleo strut, landing gear & carburetor.
- Gained an understanding of the overall functioning of an aircraft including the ignition and navigation system.
- Familiarized with the pre-flight inspection procedure to prevent any mishaps.

PROJECTS

Adaptive Control for Mobile Manipulators Present

- Currently working on the implementation of adaptive control on mobile manipulators.

Path Planning of Mobile Robot Manipulators, National University of Singapore Mar 2019 - Nov 2019

Guide: Prof. Sam Shuzhi Ge, Control & Simulation Lab

Graduate Project

- Established relevant kinematic equations (mathematical model) of the mobile robot manipulator.
- Formulated new path planning schemes (repetitive and non-repetitive with limits) for the mobile manipulator system to track certain desired paths effectively and attained discretization of both the schemes at a later stage.
- Utilized MATLAB for schemes and their corresponding computer simulation. Generated and analyzed scheme results against certain parameters, with each proposed scheme exhibiting high performance.

Framework of Repetitive Path Planning and Control for UR5 Manipulator, National University of Singapore Mar 2019 - May 2019

- Developed a complete path planning and control framework for the UR5 manipulator; implemented the RPP scheme and computed-torque controller and carried out simulations.

Vision Based Autonomous Assistance Robot using LabVIEW, MAHE, Dubai Feb 2018 - Jun 2018

Guide: Prof. Royson Dsouza, Manipal Centre of Robotics Excellence (MCORE)

Undergraduate Project

- Led a team of 4 to build a user-driven robot that provides directions to different labs & classes in MAHE, Dubai upon receiving input from the user; used a myRIO as the evaluation board.
- Designed the programs on LabVIEW & developed a face detection algorithm to identify the user.
- Integrated voice commands & motor control for giving directions with features formed and achieved desired results.

Bio mimicking a Pectoral Fin using PID Controller, MAHE, Dubai Mar 2017 - May 2017

- Studied movements of a Manta Ray to Bio mimic motion of its fin.
- Created one half of Manta Ray's flexible pectoral fins with silicone rubber which was then driven by servo motors to achieve desired oscillation; generated a PID controller program in LabVIEW for this project.

PUBLICATIONS

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

TRAINING/CERTIFICATION

Post Graduate Diploma in Industrial Automation

Aug 2017 - Sep 2017

Prolific Systems & Technologies, Baroda, India

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

Coursera Certifications

- | | |
|----------------------------------------------|----------|
| • Python Data Representations | Dec 2018 |
| • Python Programming Essentials | Nov 2018 |
| • Autodesk Fusion 360 Integrated CAD/CAM/CAE | Nov 2018 |

TECHNICAL SKILLS

Programming Languages: Python (Intermediate), MATLAB

Computing Software: LabVIEW, Wonderware Intouch

CAD: Pro-E/Creo & SolidWorks

Prototyping: 3D Printing

Others: LaTeX, MS Office & PLCs

ACHIEVEMENTS

Scholarship/Academic Excellence:

- Academic Topper in Mechatronics Engineering - MAHE, Dubai for the Academic Years 2015-2018.

Sports:

- Best Player in Women's Cricket - MAHE, Dubai for the 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.

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.
- Gulf Medical University MASE - represented DPS, Dubai in 2012.

PROFESSIONAL ASSOCIATIONS

Member, IEEE Graduate Student

Member, IEEE Robotics & Automation Society (RAS)