Sriram S. K. S. Narayanan
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EDUCATION

Doctor of Philosophy, Mechanical Engineering **May 2025 (expected)**
Clemson University, Clemson, South Carolina. **GPA: 3.83/4.0**

Master of Science, Mechanical Engineering **Jul 2021**
University of South Florida (USF), Tampa, Florida. **GPA: 3.86/4.0**

Bachelor of Technology, Mechanical Engineering **May 2017**
SASTRA University, India. **GPA: 4.0/4.0**

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Python, MATLAB, Simulink, LabView, Linux, ROS and Git.
- **Optimization and Deep learning:** Gurobi, Mosek, YALMIP, CasADi, CVX, Tensorflow, and Pytorch.
- **Motion Planning and Control algorithms:** A*, RRT*, TrajOpt, CHOMP, MPC, LQR, and iLQR.
- **CAD tools:** Autodesk Fusion and SolidWorks.

RESEARCH HIGHLIGHTS

Autonomous Robotics – Motion Planning and Data Driven Control **Jul 2021 – present**

- Designed safe motion planners for autonomous vehicles, and legged robots.
- Developed data driven model predictive controllers for agile locomotion of quadrotors and legged robots.

COVID19 – Safe Reuse of N95 masks **Aug 2019 – Jun 2021**

- Devised a corona-discharge based sterilization for safely reusing N95 masks (NSF RAPID funded).
- Constructed an autonomous surface disinfection robot based on human motion detection.

Multiagent Systems - Collaborative Manipulation **Dec 2018 – Aug 2019**

- Developed decentralized adaptive control algorithms for collaborative manipulation of multi-agent systems.
- Devised an optimal controller for stabilizing an inverted pendulum on a cart using LQR.

EMPLOYMENT EXPERIENCE

Research Intern, ClearMotion Inc. **May 2024 – Jul 2024**

- Developed data-driven motion planning algorithms for active suspension systems using model predictive control and reinforcement learning
- Designed a vision-based obstacle avoidance framework to mitigate on-road events for autonomous driving.

Graduate Teaching Assistant, Clemson and USF **Jun 2019 – present**

- Developed lab modules with circuit design, data acquisition and signal processing using NI DAQ systems.
- Mentored students with building autonomous lane following robot prototypes.

Assistant System Engineer, TATA Consultancy Services **Jun 2017 – Jul 2018**

- Applied data mining and visualization techniques for aircraft test data.
- Achieved more than 50% effort savings using Process Improvement and six sigma techniques.

Design Engineer, Formula SAE **May 2015 – Jun 2016**

- Headed the vehicle dynamics and chassis fabrication team.
- Achieved 20% weight reduction and 12% improvement in torsional stiffness for 2016 prototype.

PUBLICATIONS

- **Sriram S.K.S. Narayanan***, Zheng, Andrew*, and Umesh Vaidya. "Safe Navigation Using Density Functions. "*IEEE Robotics and Automation Letters* (2023). [link]
- Moyalan, J., Zheng, A., **Sriram S.K.S. Narayanan**, and Vaidya, U. (2023). "Off-Road Navigation of Legged Robots Using Linear Transfer Operators." *Modelling, Estimation and Control Conference (MECC)*. **(best paper award)** [link]

HONORS AND AWARDS

- **Best Poster Award:** Won the best poster award at the 2023 and 2024 Mechanical Engineering poster symposiums.
- **Quadruped Robot Challenge (Finalist):** Finished top 5 in the first Quadruped Robot Challenge at the International Conference on Robotics and Automation 2023.