Sri Sadhan Jujjavarapu

1525 Amherst Manor Dr, # 807, Buffalo, NY-14221
srisadha@buffalo.edu
(716) 220-0225
www.linkedin.com/in/sri-sadhan-jujjavarapu-40b77952
https://github.com/srisadhan
https://srisadhan.github.io/

Education

PhD | Mechanical engineering
University at Buffalo | 2017-Present
- **Research:** Human-robot Interaction, Dynamic manipulation, Reinforcement learning
- **Advisor:** Ehsan T Esfahani
- **GPA:** 3.73

MS | Mechanical engineering
University at Buffalo | 2015-2017
- GPA: 3.59

B.Tech | Mechanical engineering
Visvesvaraya National Institute of technology, Nagpur| 2010-2014
- GPA: 7.86/10

Teaching Assistant

University at Buffalo | Spring 2018
- MAE 477/577: Computer-Aided Design applications

University at Buffalo | Fall 2017
- MAE 376: Applied Mathematics for MAE

Skills

Languages
Matlab • C++ • Python
Software Packages
Solidworks • Autodesk inventor • ROS
VREP • LaTeX • VICON
OS
linux • windows
languages
English • Telugu • Hindi

Coursework

Machine learning
Intelligent CAD
Human-Robot interaction
Optimization
Optimal control
Optimal estimation methods
Robotic algorithms
Neural engineering

Experience

Human In the Loop Systems research Lab, University at Buffalo | Graduate Researcher
Fall 2017 - Present
- Developing an adaptive admittance control strategy using human physiological information (sEMG) to improve the quality of human-robot interaction.
- Developing a real-time optimal control strategy for a compliant mechanism to perform dynamic tasks such as hammering a nail or flipping a burger.
- Working on the safe and compliant grasping of objects in dynamic environments with the help of a Variable stiffness gripper.
- Developed a 2 DoF Variable Stiffness Mechanism to improve the stability and quality of human-robot interaction with an admittance controlled industrial robot.

Human In the Loop Systems research Lab, University at Buffalo | Master's research
Fall 2016 - summer 2017
- Designed and built a passive variable stiffness mechanism that can be attached to the end-effector a robot for stroke rehabilitation.
- Tested the system with the help of healthy humans performing a manipulation task.

Dassault Systèmes, India | Software developer
September 2014 - July 2015
- Worked on the development of Mechanism Synthesis application in order to provide the user with an ability to synthesize and simulate a mechanism.
- Worked on the performance improvement of assembly level features in SOLIDWORKS'16.

MINDA India Ltd.,NK Minda Group, India | Student Intern
August 2014
- Studied in detail the head-lamp assembly process to perform measurement check on the processes causing water leakage in the lamp.

General Motors Pvt Ltd, India | Student Intern
Summer 2013
- Designed a pneumatic press tool to install an oil seal at the engine crankshaft without misalignment and to decrease the fatigue caused to the worker.

Papers Published

- Stiffness Based Stability Enhancement in Human-Robot Collaboration 2019
- Improving Stability in Upper Limb Rehabilitation Using Variable Stiffness 2019
- Variable Stiffness Mechanism for Suppressing Unintended Forces in Physical Human–Robot Interaction 2019
- Variable Stiffness Mechanism for Tremor Suppression in Human-Robot Interaction 2018
- Design of a 2D Haptic System With Passive Variable Stiffness Using Permanent Magnets for Upper-Limb Rehabilitation 2017

Completed Projects

- Real time object tracking using xbox kinect and Point Cloud Library (view point feature histograms) under Dr. Karthik Dantu, University at Buffalo. 2017
- Developed real time interaction with a virtual object using Leap Motion device in MATLAB, rendered and visualized using MATLAB GUI under Dr. Ehsan T Esfahani, University at Buffalo. 2016
- MNIST and USPS data classification using logistic regression, single layer neural network under Dr. Sargur N. Srihari, University at Buffalo. 2016
- Simulated forest fire search using a swarm of quadrotors in MATLAB under Dr. Souma Chowdhury, University at Buffalo. 2016
- Implemented a tool path optimization algorithm in 3D printing of a functionally graded material under Dr. Rahul Rai, University at Buffalo. 2015
- Design, Fabrication and Control of a semi-autonomous Quadcopter under Dr.Shital S Chiddarwar, Visvesvaraya National Institute of Technology at Nagpur. 2014

Achievements

- Bagged first place in Student Mechanism & Robot Design Competition, ASME International Design Engineering Technical Conferences (IDETC) held in Anaheim, California. 2019

Side Projects

- Collision detection and adaptation by a Variable Stiffness Gripper
  Video: 2019
- Christmas tree decoration using a 6 DoF robot (Schunk powerball) and a Variable stiffness gripper
  Video: 2018

Lab: Human In the Loop Systems (HILS) lab, University at Buffalo.