Shivam Kumar Panda

shivamkumarpanda.github.io
shivamkumarpanda24@gmail.com | shivamkp@g.ucla.edu

EDUCATION

UNIVERSITY OF CALIFORNIA LOS ANGELES
PhD in Mechanical Engineering
Sep 2021 - Present | Los Angeles, CA
GPA: 3.95 / 4.0

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR
MS & BS in Mechanical Engineering
2016 - 2021 | Kharagpur, India
GPA: 9.37 / 10.0
Department Rank 2

LINKS

Github:// **shivamkumarpanda**
LinkedIn:// **shivamkumarpanda**
Personal:// **shivamkumarpanda**
Lab:// **structures-computer**

COURSEWORK

GRADUATE
Kinematics of Robotics
Dynamics of Robotics
Controls of Robotics
Introduction to ML Algorithms
Data Mining
Introduction to Reinforcement Learning
Bionic Systems
Intelligent Machines and Systems

SKILLS

PROGRAMMING
Over 5000 lines:
Python • C++ • Matlab
Over 1000 lines:
C • Javascript • CSS

OTHERS
Solidworks • Simulink • Gazebo • Ansys • Siemens NX • MSC Adams • RobotStudio • v-Rep • TwinCAT

AWARDS

- Thinkswiss Scholarship 2021
- DAAD Scholarship 2020
- Mitacs Globalink Scholarship 2019
- IAS Summer Fellowship 2018
- JEE Advanced All India Rank 1675

EXPERIENCE

ETH ZURICH | Research Intern
Dec 2020 - Sep 2021 | Zurich, Switzerland
- Worked under Prof. Robert Katzschmann at Soft Robotics Lab in team RoBoa on developing a search and rescue robot.
- Developed ground truth simulations of a soft pneumatic actuator on Sofa.
- Used the ground truth data to develop real-time simulations on Drake using piecewise constant curvature (PCC) with ground contact.

TU DRESDEN | Research Intern
April 2021 – June 2021 | Dresden, Germany
- Worked under Prof. Dr.-Ing. Steffen Ihlenfeldt at Institute of Mechatronics Engineering on designing robot simulations in RobotStudio with two collaborative ABB Gofa for forming applications using KF 675 Force shaper.
- Involved in developing a control interface in TwinCAT for industrial implementations.

WESTERN UNIVERSITY | Research Intern
May 2019 – July 2019 | London, Canada
- Worked under Prof. Mehrdad R. Kermani at ARM Lab
- Prototyped a 7-DOF Pulley-String-based Multi-Fingered under-actuated Robot gripper alongwith all electronics and controls.

RESEARCH

UCLA STRUCTURES-COMPUTER INTERACTION LAB | PhD Researcher
Sep 2021 – Present | Los Angeles, CA
- Working on autonomous navigation of agricultural robots, vehicles and drones.
- Developing Machine Learning models for crop phenotyping and prediction of yield on Canola and Flax crops.
- Developed a neural network based 1-D energy model for elastic ribbon.

IIT KHARAGPUR | Undergraduate Researcher
Sep 2017 – June 2021 | Kharagpur, India
- Prototyped a lightweight pulley-string-based FCCA knee orthotic device with energy optimization using a FSM-based swing & stance phase segmented cascaded PID Controls.
- Prototyped a mobile robot with a scissor-lift based climbing to navigate autonomously across 50 cm high steps of terraces during terrace farming.
- Designed an 8-DOF three-fingered vacuum-based industrial gripper to grasp non-uniform objects with contact points determination algorithm based on six points form-closure.

PUBLICATIONS

[1] S. Sahoo, S. K. Panda, D. K. Pratihar, and S. Mukhopadhyay. Prediction of step length using neuro-fuzzy approach suitable for prosthesis control. *IEEE Transactions on Instrumentation and Measurement*, 69(8):5658–5665, 2020.

[2] S. Sahoo, S. K. Panda, D. K. Pratihar, and S. Mukhopadhyay. Locomotion modes and environmental features recognition using laser distance sensors. *IEEE Sensors Journal*, 22(5):4625–4633, 2022.