

Dev Gulati

San Diego, CA 92037 | 310-227-5700 | degulati@ucsd.edu | [linkedin.com/in/devgulati](https://www.linkedin.com/in/devgulati)

SUMMARY

Senior year engineering student specializing in Controls & Robotics with experience in software development pursuing software engineer internships. Prior experience as a Data Science intern at Mobility & AI Lab at Nissan and conducting research to build computational models for soft robots at Bioinspired Robotics and Design Lab at UCSD. Skills include Python, C++, and ROS.

EDUCATION

University of California, San Diego

Anticipated December 2021

B.S. in Mechanical Engineering with a Specialization in Controls and Robotics (GPA: 3.56/4.0, Major GPA: 3.88/4.0)

Relevant Coursework:

- *Computer Science:* Advanced Data Structures, Software Tools & Techniques Lab, Mathematics for Algorithms & Systems
- *Mechanical:* Robotics (Graduate Course), Robotic Planning & Estimation, Intro to Autonomous Vehicles, Intro to ML Algorithms, Linear Control

EXPERIENCE

Mobility & AI Laboratory, Nissan Motor Corporation

Kanagawa, Japan

Data Scientist Intern – Python, C#, SCANer

Nov 2020 – Dec 2020

- Conducted data analysis on 3TB dataset to model traffic behavior of vehicles and pedestrians at a road intersection in Python
- Created visualizations for insights and cleaned data for use in an AI model, presenting results to senior management
- Investigated the relationship of seat pressure distribution with driver response in high-risk driving scenarios for development of novel driver assistance systems for collision avoidance, using SCANer (AV Simulation Software), C#, and UDP Protocol

Bioinspired Robotics and Design Laboratory (BRDL)

La Jolla, CA

Undergraduate Researcher – MATLAB, SolidWorks

Apr 2020 – Present

- Investigating the interaction of soft bodies with granular media through numerical simulation
- Developing a computationally inexpensive physics-based simulation tool using a reduced-order modelling approach called resistive force theory (RFT) for investigating the interaction of soft robots with granular media in MATLAB
- Applying research for design exploration/optimization of robot to discover efficient designs for locomotion in Solidworks

Tata Elxsi (Engineering Services)

Karnataka, India (Remote)

Software Engineer Intern – HTML, CSS, JavaScript, Python (Flask)

Aug 2020 – Oct 2020

- Built a front-end user interface that extracts video frames from a screen recording for a proctoring application that monitors student activity during online exams for schools in India using HTML, CSS, and JavaScript
- Integrated front-end user interface with back-end (facial detection models) using AJAX and Python (Flask)
- Created documentation on problem, contributions, process, challenges, and future improvements in developing the interface

PROJECTS

Smart Light Switch System – TensorFlow, OpenCV, Raspberry Pi, Python

Jan 2020 – Mar 2020

- Awarded first place for creating a smart light switch system to reduce power consumption through collaborating in a team of six and presented product at showcase in IEEE's Quarterly Project's Competition
- Implemented RCNN-based machine learning model on Raspberry Pi leveraging TensorFlow Lite Object Detection API
- Adapted model to control the light switches in a room using a database and OpenCV

Spell Checking & Autocomplete in Text Editor – Java, JUnit

Dec 2019 – Jan 2020

- Programmed and tested spell checking, autocomplete, and spell suggest features for a text editor user interface in Java using Binary Search Trees, Hash Tables, and Tries
- Designed algorithms and conducted benchmarking tests to optimize performance of algorithms in Java using JUnit
- Implemented algorithms for generating and processing text to create a Markov text generator, using Java's list interface

Binary Search Trees, Data Structures & Object-Oriented Design – Java, C, C++

Sept 2019 – Dec 2019

- Programmed a binary search tree on disk using the template feature of C++ that accepts input from an ASCII file or keyboard
- Implemented a hash table with double hashing using a bully algorithm to decide between conflicts in Java and C++
- Created a polymorphic generic container based on a circular linked-list data structure in C that accepts input from a keyboard