

# Ganesh Pimpale

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## EDUCATION

### University of California, Berkeley

Graduation: May 2025 (Anticipated)

- B.S. Major: Mechanical Engineering, Minor: Theater and Performative Studies
- Coursework: Linear Algebra, Discrete Math, Solid Mechanics, IOT Electronics, Statistice and Machine Learning
- Extracurriculars: Berkeley Innovation, Effective Altruism, The Daily Californian, Indian Students Association

## SKILLS

- **Programming Languages:** Python, Java, C++, C#, Javascript, MatLab, L<sup>A</sup>T<sub>E</sub>X
- **Operating Systems:** Windows 7/8/8.1/10, Windows Server 2016/2019, Linux (Ubuntu, Fedora, Arch)
- **Technologies:** OpenCV, PyBullet, SciPy, Keras, ROS, Gazebo, Docker
- **Design Tools:** SolidWorks(Program/API), Onshape, FreeCAD(API), OpenSCAD, Ultimaker Cura, Figma, GIMP

## EXPERIENCE

### SRI International

Menlo Park

Robotics Intern

May 2022 - Present

- Developed a high precision space-grade multi-axis actuator by implementing technology from prior research in micro-robotics and flexible electronics
- Used SolidWorks and Altium to create rapid prototypes of the part and compact flexible PCBs
- Implemented a cloud computing system to run multiple robots running different ROS versions (legacy to current) and created Gazebo simulations of the hardware

### Interactive Perception and Robot Learning Lab, Stanford / NYU

Remote

Research Intern

August 2020 - May 2022

- **Robotic Automated Assembly:** creates a dataset of exploded 3D views to teach robots to assemble parts via imitation learning
  - Developed software for 3D-model analysis to automatically disassemble simple assemblies using Pybullet
  - Automated URDF generation through the SolidWorks API and Implemented current robotic grasping algorithms

### Innexgo LLC

San Jose, California

Hardware Engineering Lead, Co-Founder

August 2019 - Present

- Designed user hardware and internal electronics of RFID scanners
- Oversaw the manufacturing and installation process of early pilot programs; developed system for 3D-printing at scale

### Stanford Compression Forum

Palo Alto, California

Research Intern and Student Mentor

May 2019 - September 2021

- **Facial Landmark Data Collection to Train Facial Emotion Detection Learning Models**
  - Designed an efficient method of data collection for emotion detection models
  - Created software to track facial landmark data using the BlazeFace CNN and a user interface to associate emotions to facial data
- **Vision-Based Robotic Object Manipulation;** Using a Human-Mimicking Hand Design with Pure Object Recognition Algorithms to Intelligently Grasp Complex Items
  - Researched robotic grasping algorithms using only vision data
  - Remodeled software to generate 3D models from vision data and implemented a primitive shape detection algorithm
- **Human-Based Image Compression;** Using a Deterministic Computer Algorithm to Reconstruct Pre-Segmented Images
  - Prototyped a segmentation based lossy image compression algorithm using Keras
  - Evaluated performance of algorithm against human compressors and other popular compression algorithms
- Mentored groups of high schoolers and conducted seminars teaching CAD, Python, data analytics, and electronics

## PROJECTS

### Infill Pattern and Density Optimization for 3D-Printing

Python, C++, FreeCAD, Ultimaker Cura

Software Engineering and Materials

October 2019 - May 2020

- Designed software that optimizes the strength to mass ratio of 3D-printed objects
- Received the Grand Prize Alternate and First Award in the 2020 Synopsys Championship Science Fair

### “Marine Autonomous Litter Collector” (MALC)

Python, OpenCV, Keras, SolidWorks

Software Engineering and Mechanical Engineering

September 2018 - May 2019

- Created a full scale low-cost autonomous water drone capable of searching for and picking up surface trash
- Received the Regional Stockholm Junior Water Prize and the Grube Award for the most ingenious project