# Ganesh Pimpale

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## Education

**University of California, Berkeley** *Graduation: May 2024 (Anticipated)*

- B.S. Major: Mechanical Engineering
- Coursework: Linear Algebra, Discrete Math, Solid Mechanics, IOT Electronics, Statistics and Machine Learning
- Extracurriculars: Berkeley Innovation, The Daily Californian, Indian Student Association, Effective Altruism

## Skills

- **Programming Languages:** Python, Java, C++, C#, Javascript, Typescript, MatLab, SQL, LaTeX
- **Technologies:** OpenCV, PyBullet, SciPy, PyTorch, MySQL, Docker, ROS, Gazebo, React, Linux(Ubuntu, Fedora)
- **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*