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

Skills

– **Programming Languages:** Python, Java, C++, C#, Javascript, MatLab, LaTeX
– **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(Program/API), OpenSCAD, Altium, KiCAD

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*