David Yi

www.linkedin.com/in/davidh-yi
https://davidh-yi.github.io
dy2421@columbia.edu
(917)733-0010

Skills:

Prototyping:
Sketching
Rendering
3D Printing
Soldering
CNC Machining
Milling
Turning
Laser Cutting
TIG welding
Waterjet
Topology and Optimization

Software:
Microsoft Office
Adobe Photoshop
Solidworks + PDM
Autodesk Inventor
RDWorks
Autodesk Fusion 360
Openscad
nTop Platform
Cura
Prusa Slicer
DaVinci Resolve
Inkscape
AutoCAD
ANSYS Fluent/Mech
MATLAB
Arduino
MissionPlanner
Raspberry Pi
OpenVSP
MasterCAM
Robot Operating System
Simulink

Programming Languages:
C++
Python

Languages:
Spanish
Korean

Education:

Columbia University, New York, NY **Dec 2021**
Master of Science in Mechanical Engineering, Concentration in Robotics and Control
GPA: 3.70
Coursework: Introduction to Robotics, Data Science for Mechanical Systems, Mechatronics, Robot Learning, Nanoscale Actuation and Sensing, Digital Manufacturing, Robotic Studio, Computational Aspects of Robots, Evolutionary Computation and Design Automation

Northeastern University, Boston, MA **May 2018**
Bachelor of Science in Mechanical Engineering and Criminal Justice
Honors: Dean's List (2017-18), Winners of Capstone Design 2018

Professional Experience:

Kashmir World Foundation – New York, NY **Jan – Dec 2021**
Mechanical/Artificial Intelligence Engineer

- Designing autonomous blended body drones (UAVs) that will cruise at approximately 9000 ft in the air to prevent poaching of endangered species around the world
- Researching different fabrication methods of blended body drones and other components
- Analyzing different blended body drone models to maximize efficiency in takeoff, cruise in high altitudes and landing using OpenVSP
- Programming and simulating potential drone flight paths using Ardupilot SITL, DroneKit, MavProxy, MissionPlanner and Python
- Implementing convolutional neural networks to observe endangered species and capture poacher using high resolution images and real time videos
- Utilizing different camera feeds to obtain over 100,000+ images of different endangered animals for convolutional neural network
- Training and testing convolutional neural networks to achieve accuracies between 95%-97% and increase speed of object detection by at least 20%

Morphbots – New York, NY **Jan – Oct 2021**
Robotics Engineer

- Designing self-assembling modular blocks that slide into any configuration based on user design
- Prototyping hardware of modular blocks to ensure free movement on a designated rack in all three dimensions
- Integrating electronic components to achieve free movement and controlled using Raspberry Pi

G & F Systems – New York, NY **Jan 2019 – Jan 2020**
Mechanical Design Engineer

- Oversaw design and manufacture of $1,000,000+ large-scale heating/cooling/freezing spirals
- Designed large-scale spirals using AutoCAD Inventor and inspected technical drawings per ASME-Y14.5 – 2009
- Fabricated and prototyped spiral parts using CNC mill, lathe, waterjet, and power tools

Research Experience:

Creative Machines Lab, Columbia University – New York, NY **Sept – Dec 2021**
Hardware/Software Researcher

- Recreating the theory of life with robot links, designed to mimic evolution over millions of simulations
- Redesigning new robot linkages that allow for less friction and better adhesion to other linkages using Autodesk Fusion 360
- Simulating potential outcomes with different scenarios to understand and analyze evolution using PyBullet
- Assembling redesigned robot linkages using 3D printing and soldering

Creative Machines Lab, Columbia University – New York, NY **Sep – Dec 2020**
Mechanical Engineer

- Designing a machine learning algorithm to approximate extrusion rate for a 3D food printer
- Programming different machine learning algorithms ranging from simple linear regression to decision trees using Python