# David Yi

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## Skills:

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

**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
VSPAERO
MasterCAM
Robot Operating System
Simulink

**Programming Languages:**
C++
Python

**Languages:**
Spanish
Korean

## Education:

**Columbia University**, New York, NY — **Exp. 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

## 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

**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 VSPAERO
- 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**
**Robotic Engineer Intern**
- 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

**Columbia University Creative Machines Lab** – New York, NY — **Sep 2019 – May 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

**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