ALEX B. JIANG

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EDUCATION

University of Pennsylvania, B.S.E in Mechanical Engineering, M.S in Robotics (Expected) August 2021 – Present
GPA: 4.0/4.0
Relevant Courses: Product Design (IPD 515), Machine Design & Manufacturing (MEAM 201), Intro to Open-Source Hardware and Software (ESE 190), Statics & Strength of Materials (MEAM 210), Engineering Ethics (EAS 203), Programming Languages & Techniques (CIS 120), Intro to Thermal-Fluids Engineering (MEAM 202), Linear Algebra & Differential Equations (MATH 240)
Extracurriculars:

- *Engineering Student Activities Council* (Social chair and event planner) - Oversee 30 student activity groups; plan events to strengthen the SEAS community; organize an annual formal for 600+ students; raised $1,000+ through jumble sales
- *Penn Aerial Robotics* (Hardware team) – Design motor mounts for a remote-controlled aircraft in SOLIDWORKS; 3D-print and laser cut parts to assist in the assembly of the aircraft
- *Pan Asian Dance Troupe* (Marketing director) - Design social media graphics to promote gigs and shows; manage the club website; take and edit photos for photoshoots

Montgomery Blair High School, STEM Magnet Program August 2017 - June 2021
GPA: 4.0 (UW), 4.79 (W)
Honors and Awards: International Public Policy Forum Runner-Up (2021), Princeton Debate Tournament Champion (2020), Harvard Round Robin Champion (2021), ExploraVision Honorable Mention (2020), National AP Scholar (2020),
Relevant Courses: Mathematical Physics, Quantum Physics, Complex Analysis, Materials Science, Analysis of Algorithms, Optics, Discrete Math, Organic Chemistry

WORK & RESEARCH EXPERIENCES

Researcher Intern February 2022 – Present
UPenn GRASP lab (Kod*lab)

- Designed and 3D printed a novel device that actuates an origami revolute joint.
- Designed a plate that holds a kill switch and prevents dust from contaminating a quadruped's electronics.
- Designed a device that ensures consistent angles for sheet metal bending.
- Assist in the assembly and design of a novel quadruped robot with an actuated spine.

Research Intern May 2022 – July 2022
National University of Singapore *- Prof. Guillaume Sartoretti*

- Wrote a control algorithm for the actuators of an 18-DOF hexapod robot.
- Adapted the central pattern generator (CPG) parameters of a hexapod robot via a closed-loop feedback control system to ensure stable locomotion.
- Designed a reactive stabilization algorithm that permitted a hexapod robot to traverse uneven and angled terrains without prior knowledge of the terrains.

Researcher Intern June 2020 – October 2020
Independent – Mr. Quinn Shen (UBER ATG Engineer)

- Developed and trained a neural network that predicts dense depth maps from input color images.
- Utilized Amazon AWS to store image, pose, and lidar data and train machine learning models.
- Improved training accuracy by 10% by integrating a densely connected encoder architecture into the model.
- Studied the effects of introducing alternative representations of the RGB color model (HSV, CIECAM) into the network.

Founder and Instructor April 2020 – July 2021
AE Tutoring

- Maintained the company website, led marketing efforts, developed curriculum and course materials for classes.
- Taught two sessions of a two-week debate summer camp (2020) and two sessions of a fall debate course (2021).

TECHNICAL SKILLS & INTERESTS

Programming & Cloud Technologies: Python, Java, MATLAB, OCaml, PyTorch, AWS EFS, AWS EC2
Computer Software: SOLIDWORKS, Autodesk Inventor, Fusion 360, Onshape, STELLA
Skills: product design, rapid prototyping, machining, laser cutting, 3D printing, team management, communication