

Andrew Garrett

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EDUCATION

UNIVERSITY OF PENNSYLVANIA

MSE: ROBOTICS, FOCUS IN AI & ML
Aug 2021 - Dec 2022 | Philadelphia, PA
School of Engineering
Accelerated Master's Program
BSE: MECHANICAL ENGINEERING
Aug 2018 - May 2021 | Philadelphia, PA
School of Engineering
Minors: Computer Science, Mathematics
Cum. GPA: 3.5 / 4.0
Major GPA: 3.8 / 4.0

COURSEWORK

MEAM

Statics • Dynamics • Thermodynamics
Solid Mechanics • Fluid Mechanics
Controls of UAVs • Vibrations
Mechanical Design

CS

Functional Programming • OOP
Algorithms • Data Structures
Data Modeling • Machine Learning

SKILLS

HARD SKILLS

Algorithms • Data Structures
Machine Learning • Deep Learning
Computer Vision • Controls
Simulation • Mechanical Design

SOFT SKILLS

Teamwork • Leadership • Planning
Project Development • Research
Time Management

SOFTWARE

Highly Proficient:

Python (Pytorch, TF, JAX) • Java
MatLab • OCaml • SolidWorks
LabView • Arduino

Familiar:

MS Office • \LaTeX • C++ • JavaScript
HTML • CSS

INTERESTS

Origami • Modern Art • Chess
Sailing • Tennis • Soccer • Golf

EXPERIENCE

LABORATORY OF DR. JIANBO SHI

COMPUTER VISION RESEARCH INTERN

May 2021 - Present | Philadelphia, PA

- Completed rigorous training in Computer Vision and Deep Learning techniques, both theoretically and in Python implementation
- Coordinating with Toyota Research to collect video data of subjects solving escape room style puzzles, using hardware such as Azure Kinect and Insta360
- Built pipelines for synchronized video recording, as well as post-processing steps like detection, pose-estimation, and 3D-reconstruction, leveraging Pytorch, OpenCV, and COLMAP

UNIVERSITY OF PENNSYLVANIA

TEACHING ASSISTANT - CIS DEPARTMENT

January 2021 - Present | Philadelphia, PA

- Serving as a TA for ~130 students under Dr. Anindiya De in CIS 262: Automata and Complexity Theory for the Spring and Fall 2021 semesters
- Develop weekly homework solutions and lead weekly office hours to help students with conceptual understanding

VIJAY KUMAR ROBOTICS LABORATORY

UNDERGRADUATE RESEARCH ASSISTANT

October 2019 - December 2020 | Philadelphia, PA

- Served as Mechanical Design Lead for a medium sized quadrotor platform with 6D-pose manipulator using novel Quaternion-based control
- Utilized SolidWorks to perform FEA, making adjustments for a dynamic COG
- Led electromechanical hardware development from raw materials to finished prototype

VOLUNTEERING

ADVENTURES CROSS-COUNTRY - ARCC | STUDENT VOLUNTEER

July 2017 - August 2017 | Ladakh, India

- Worked at a local primary school to teach English to Ladakhi children
- Refurbished three classrooms and helped build a playground for said students

July 2016 - August 2016 | Kampong-Speu, Cambodia

- Worked at a local primary school to teach English and Math to Khmer children
- Constructed and installed 40+ bio-sand, clean water filters for needy families in Asia's poorest province

EXTRACURRICULAR ACTIVITIES

UNIVERSITY

- American Society of Mechanical Engineers (ASME) - Chapter Board Member
- Penn Undergraduate Math Society (PUMS) - Chapter Board Member
- Penn Undergraduate Refugee Empowerment (PURE) - Member
- Phi Gamma Delta (FIJI) - Chairman of Mental Health

HIGH SCHOOL

- National Honors Society (NHS) - Chapter Vice President
- Chinese Club - Founder and Vice President
- Varsity Tennis - Captain