DONGXIAO YANG

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EDUCATION

Columbia University New York
M.S. of Mechanical Engineering Expected Dec 2023

- Major in Control and Robotics.
- GPA: 3.93 / 4.3.

Shanghai Jiao Tong University Shanghai, China
B.E. of Mechanical Engineering Aug 2022

- GPA: 3.7 / 4.0.

WORK EXPERIENCE

Tesla Shanghai, China
Mechanical Engineer Intern Feb 2022 - May 2022

- Designed, optimized and integrated fasteners and joints on Body In White; supported production of new parts with suppliers; saved $0.08 per vehicle and $80,000 per year.
- Led experiments to verify sealing performance of a new design to reduce part weight by 20%.

PROJECTS AND RESEARCH

Columbia University: Wrinkle Attentive Fabric Manipulation Metric Sep 2022 - Present

- Collaborated in developing a metric and a loss function by combining wrinkle measurement and Interception over Union (IOU) for fabric folding tasks.
- Built a Blender environment from scratch with Python API for folding simulation; implemented the hill-climbing algorithm to train the model.

Columbia University: Learning Sound Features with Delayed Codebook Regularizer Sep 2022 - Dec 2022

- Cooperated in developing an architecture to incrementally update an audio feature extractor for multi-task audio classifications; utilized knowledge distillation to prevent forgetting.
- Improved audio classification accuracy marginally on resources.

Shanghai Jiao Tong University & State Grid China: Bolt Tightening Robot for Power Transmission Tower Sep 2021 - Aug 2022

- Led a team to design and prototyped a three-foot mechanism to climb on a power transmission tower and tighten the bolts with torque larger than 50 Nm.
- Performed automation coding and TCP/IP protocol with Python and obtained feedback of step motor by close loop control; applied image processing on camera to get real-time feedback for bolt positioning.
- Proposed an improved design with 20 kg less weight and 4 less motors.

Shanghai Jiao Tong University: Design of Robotics Car with Transformable Wheels Jun 2021 - Aug 2021

- Synthesized a linkage mechanism; modeled and manufactured the prototype being able to carry loads of 3 times its weight and transform the wheel within 1 second for step climbing.
- Coded the Arduino program and applied close loop control to detect barriers and adjust directions.

Shanghai Undergraduate Innovation Program: Research and Design of Unmanned Automatic Logistics Station Sept 2020 - Jul 2021

- Directed a team with more than 40 members to design and prototype a base station for logistic drones; achieved unmanned landing and automatic package shipping between the luggage carrier on the drone and the base station.

SKILLS

- Language: English (Fluent), Chinese (Native).
- Programming language: Python, Matlab, C++.
- Computer aided design: Solidworks, Catia.
- Other software: Adobe Photoshop, Premiere, Audition, Microsoft Office Suite.