Kevin Xuan

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Education

Carnegie Mellon University
Bachelor of Science in Mechanical Engineering, December 2019
Minor in Innovation and Entrepreneurship

Work Experience

- **Intern at Daimler Trucks North America LLC Chassis Engineering** (Summer 2019)
  - Designed improved step clamp with increased robustness and > 50% lower cost
  - Designed improved battery box bracket that reduced components and lowered costs by 30%
  - Tracked design iteration and cost analysis with detailed spreadsheets
  - Trained in Siemens NX, Siemens Smaragd, Engineering Client
- **Contractor for Deepcode Robotics Ltd.** (Summer 2016, Winter 2017, Spring 2020)
  - Designed and built prototype for app-controlled ping-pong robot
  - Redesigned tennis ball collector-launcher robot for 100% increased carrying capacity
  - Trained in Solidworks and STM32 board programming
- **Intern at Choitek LLC** (Summer 2018 to Fall 2018)
  - Designed and built working prototype of small quadrupedal "cat" robot
  - Trained in Rhino CAD and Arduino board programming

Skills

- **Design:** Mechanical Design, Circuit Design, App Design
- **Coding:** Python, Java, C, Javascript, Arduino
- **Manufacturing:** Mill, Soldering, Lathe, CNC, Lasercutting, 3D-Printing
- **Software:** Solidworks, Siemens NX, Rhino, Matlab, Siemens Smaragd, Denso, Microsoft Office

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Major Projects

- **Mechanical Engineering Design II Capstone Project: Bluetooth Nerf Turret** (Spring 2019)
  - Designed collapsible Nerf sentry turret; controlled via Bluetooth app, or operated with buttons
  - Leader of 5-person team to identify problem space and create working prototype solution
  - Utilized existing products to focus design effort on innovative features
- **Personal Project: Bluetooth Nerf Turret** (Spring 2020)
  - Self-guided revisit of capstone project, adapted to easily integrate popular Nerf Stryfe blaster
  - Full-stack electrical, software, and mechanical design, manufacture, and iteration
- **Personal Project: Caterpillar Robot** (Spring 2020)
  - Self-guided robotics project, aimed at emulating insect locomotion to traverse difficult terrain
  - Full-stack electrical, software, and mechanical design, manufacture and iteration
- **RoboClub UkuleleBot and Conducting Interpreter** (Spring 2019 – Fall 2019)
  - Lead mechanical designer for ukulele-playing robot; guided new team members through mechanical design process
  - Developed computer vision program to interpret human conductor's gestures
- **Apex Buggy "Firefly" New Vehicle** (Fall 2016 – Spring 2017)
  - Assistant head mechanic, in charge of project scheduling and workspace maintenance
  - Designed buggy body shape; codified several processes for manufacturing carbon-fiber body
- **Designing for the IoT Course Projects** (Fall 2019)
  - Worked in groups to create unique IoT solutions for environment-specific problems
- **Mechanical Engineering Design I Course Projects** (Fall 2017)
  - Worked in groups to solve mechanical challenges in scientific but resource-efficient manner

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Patents and Publications

- **Patent:** Yiran Xuan, Zhiwei Shi etc., "A Virtual Ping-Pong Racket", Patent ID: ZL 2016 2 1391352.5, Issued on Dec. 19, 2016
- **Publication:** Fan Yang, Yiran Xuan etc., "R-Focus: A Rotating Platform for Human Detection and Verification using Electronic and Visual Sensors", WASA2014, Springer (Best Paper Award)