Hao Chen
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Experience:

Letspotluck.com, 2019-present
Co-founder

- DevOp -- Setting up containerized development and automated deployment, self hosting and Grafana based server monitoring
- web development to realize current capabilities (MEN stack, google login, stripe integration)

Mayfield Robotics, 2017-2018
Manufacturing Test Engineer

- Design and implement calibrations and tests (hardware/software) for robot manufacturing
- Support contract manufacturer production line bring up and hardening
- Communicate with and visit vendors to ensure mutual understanding (desired specifications and eliminate potential language barrier)

Airphrame Inc., 2013-2017
Co-founder / DIrector of Hardware

- From rapid prototyping to low volume manufacturing: CAD/CAM, 3D printing, vacuum forming, machining, production processes
- Help define company direction and business strategy based on system capabilities and realistic development projections
- Scope, design, prototype, deploy and maintain the Airphrame data collection UAV platform (100 units built)
    - Propulsion system design and integration
    - Sensor and autopilot integration
    - Adding mission critical autopilot features
    - Flight characterization and feedback controller tuning
    - Log analysis and diagnostics
    - Institute manufacturing processes for the drone fleet
    - Ongoing rapid fleet upgrades to meet operational requirements
- Define operators' training process and operational procedures
- Android software development for automating data collecting and transfer for DJI drone platforms

Consulting:

Grandpractice - Dental headlamp prototype development (electrical, mechanical, firmware) || **SRP Aero** - Flight tuning (log analysis and PID) || **Mayfield Robotics** - Manufacturing test development (Python)

Skill:

Software: Javascript, html, css, Python, Android development/Java, Matlab
Communication: Fluent in English and Chinese (mandarin and Shanghai Dialects)
Productivity: git, Slack, Jira, Confluence, Asana
Certifications: Certified SolidWorks Associate, E.I.T., FAA certified sUAS pilot

- Machine learning paradigms, object detection using feature descriptors (HoG, texture) and convolution neural networks

Berkeley UAV Lab Researcher

- Build and maintain a fleet of UAVs for research
- Implement and demonstrate recursive bayesian estimation based search algorithm for UAV path planning on the Portuguese Air Force Academy's UAV system
- Organize and contribute to project grant writing

Relevant Coursework: Design of Basic Electro-mechanical Devices, Engineering Design, System Feedback Control, Mechatronics Lab, Computer Vision

SquishBot – MIT Robotic Mobility Group, Summer 2009 Cambridge, MA
A DARPA ChemBot challenge for developing soft meso-scale robot that is compliant

- Performed material characterization

Designed, prototyped, and assembled mechanical parts for the prototype

CNC Foam Routing Table – Senior Design Project, Fall 2010 Berkeley, CA
Developed a table top CNC foam routing system for precision cutting of payload bays for foam based aircrafts

- Designed and developed the CAD model for production
- Machined components for the CNC unit

Stochastic Searching Algorithm for UAV, Summer 2012 Santa Cruz, Portugal
Implemented stochastic searching algorithm based on Recursive Bayesian estimation on Portuguese Air force UAV system

- implemented/integrated stochastic search with the existing tracking algorithm
- Developed GUI for operations
- Demonstrated open sea detection and tracking with said algorithms

Graduate Student Instructor

- **ME 135 –** Design of Microprocessor-based Mechanical Systems, Spring 2012
- **Engineering 10 –** Introduction to Mechanical Engineering, Fall 2011

Project: **Monterey Bay Aerial Sensing**, Fall 2012

Operated a remote controlled aircraft off of Monterey Bay Aquarium Research Institute (MBARI) Zephyr vessel

- Constructed a water resistant platform for maritime operations
- Obtained footage of oceanic features and devised preliminary CV algorithm for boat detection

NATcar- EE192 Mechatronics Lab, Spring 2012

Developed an autonomous vehicle based off of an off the shelf TT-01 RC car model

- Designing motor drive, power supply and magnetic sensor circuitry
- Data fusion using multiple magnetic field sensors for lateral error and feedback control for velocity and steering control