Thomas Greenhill

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Portfolio: https://drive.google.com/drive/folders/0B6M5Me26bkDMdU94VXBoZkluQTA?usp=sharing

Summary

I'm a fourth year undergraduate student at UC Davis studying Aerospace and Mechanical Engineering pursuing opportunities in the electric aviation and commercial space industries. I am an avid glider pilot with over 700 flight hours, and I have special interests in control system design, vehicle dynamics, aerostructural design and meteorology.

Education

Sequoia High School *August 2013-June 2017*

- High School Diploma, 4.193/4.0 GPA

University of California, Davis *September 2017-June 2021 (intended)*

- B.S. in Aerospace Engineering, BS. in Mechanical Engineering, Upper Division GPA 3.84/4.0, Dean's Honor List.
- Member, UC Davis Tau Beta Pi (top 8% of UCD College of Engineering)
- Relevant coursework: MIMO Optimal Robust Control (graduate level course), Stability & Control of Aerospace Vehicles, Automation & Control, Mechanical Design, Thermo-Fluid Dynamics, Heat Transfer, ...

Skills

- Fluid Dynamics, Vehicle Dynamics, and Simulation Tools: XFoil, AVL, SIDPAC, XFLR5, Star CCM+, Solidworks FEA.
- 2D/3D CAD Software: SolidWorks, Autodesk Fusion, Corel Draw, Adobe Illustrator
- Prototyping techniques: CNC tooling, Waterjet & Laser cutting/engraving, metal and wood machining, prepreg and wet lay-up composites manufacturing, soldering, crimping, extensive knowledge of Arduino-based solutions.
- World languages: Bilingual fluency in French
- Software: fluency in MATLAB, Python, Arduino, M.O. and Apple iWork suites, advanced skills in Excel and Numbers
- Leadership: Tahoe Truckee Soaring Association Board of Trustees Secretary

Experience

R&D Engineering Intern, Dynamic Systems Modelling Intern, Kitty Hawk Corp. *June-September 2020*

- Independently developed electric self launch system for Windward Performance SparrowHawk sailplane.
  - Designed and analyzed battery, motor and motor controller structure with extensive use of Solidworks CAD and simulations, manufactured and integrated carbon fiber, CNC machined aluminium and 3D printed parts.
  - Designed, analyzed, integrated & tested cooling, ventilation & exhaust ducts for electrical components.
  - Developed a flight test plan, flight envelope limits and performed ground tests leading up to first flights.
- Developed system identification solution for transfer function, stability derivative and aero-coefficient estimation.
  - Created over 25 MATLAB functions and 30 validation scripts, to interface flight test data scheme with SIDPAC and produce values useful for validation of aerodynamic and control models.
  - Used Python to access AVL and implement numerical methods to produce time-series for function validation.

Co-Founder & Engineer, Epic Aerospace, Inc. *June-October 2019*

- Developed the first prototype of CHIMERA A. Space Tug.
- Pitched engineering & business model to investors, raised funds for further development.

R&D Engineering Intern, Joby Aviation, Inc. *June-August 2016, June-September 2017*

- Independently developed first person view (FPV) system with 5km+ range and high signal reliability as well as telemetry heads up display (HUD) solution for remotely controlled prototype sub-scale aircraft
- Independently developed power management system with 1200W solar panel array and 7200Wh battery bank for mobile ground control station with extensive use of CAD design and computerized routing machinery
- Tested and analyzed efficiency difference between coaxial and conventional motor/propeller configurations.
- Developed structures and electronics for autonomous flight research multicopter capable of carrying sensor pay-loads exceeding 50kg with use of composite materials, CAD software, CNC/manual machining and PCB design

Awards

- 6th place, US Gliding Open Class National Championships, Hobbs NM. June 2019.
- Holder of 9 California State Distance Records. August 2019-Present.