ANTHONY ZHANG

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EDUCATION

College of Engineering – University of California, Berkeley *May 2022*

B.S. Mechanical Engineering with Aerospace concentration and minor in Electrical Engineering & Computer Science *GPA: 3.326*

Skills: AutoCAD, Solidworks, Matlab, Simulink, Ansys, GD&T, Computational Fluid Dynamics, Finite Element Analysis, Materials Testing, Circuit Design, 3D Printing, Laser Cutting, Soldering, CNC Mill, Python, Java, Javascript, MongoDB, Adobe Illustrator

Relevant Coursework: Thermodynamics, Static and Fluid Mechanics, Visualization and 3D Modeling for Design, Data Structures, Manufacturing and Tolerancing, Materials, Dynamic Systems and Feedback, Designing Information Devices and Systems, Heat Transfer

WORK EXPERIENCE

Fulgent Genetics, Engineering Intern *May - July 2019*

- Programmed software in Python with Google APIs to automatically populate Google Sheets with DNA tag information and simultaneously track and input DNA control trends data for specified calendar quarters onto a spreadsheet file
- Extracted protein sequence and functional data from Uniprot and parsed key information into a MongoDB database
- Conducted testing for edge cases that would generate errors in code from irregular or inconsistent DNA tags
- Presented developed programs in collaboration with Fulgent's LIMS team for application in the pipeline management system

EXTRACURRICULAR ACTIVITIES

Cal Aero SAE, CFD Team Member *Aug 2020-Present*

- Create CAD drawings of the wing, fuselage, and tail designs with Solidworks and perform Ansys Fluent simulations on the separate components at various angles of deflection and attack to optimize the aerodynamic profile of the aircraft
- Collect empirical data of load, material, and projected weather conditions from other subteams and implement CFD applications to determine ideal element sizing and output desired variables of lift and drag coefficients and center of pressure

Human-Powered Vehicle (HPV), Frame Team Member *Jan - Aug 2020*

- Constructed CAD designs of vehicle frame, stress tested individual parts and entire assemblies with Solidworks FEA for safety, and manufactured aluminum body parts in machine shop using mills, drill presses, lathes, CNC machines, bandsaws, and presses
- Launched Ansys simulations to test the different airfoil shapes of the fairing designs in order to minimize drag of the vehicle

Theta Tau Professional Engineering Fraternity, Treasurer, Fundraising Chair *Sep 2019-Present*

- Fundraise $3000 per semester for multiple organizations like NACME (Minorities in Engineering) and Metavivor

PROJECTS

App-Controlled Camera Slider *Sep - Nov 2019*

- Modeled components using Solidworks and fabricated individual parts with 3D printing, machining, and laser cutting
- Conducted tolerance analysis on part dimensions and assembly constraints to optimize size of clearance holes, reduce friction between surfaces, and minimize tolerance stackup in order to ensure smooth operation of camera slider
- Devised the belt and stepper motor pulley system of the camera slider and calculated step delay, tension allowance, product dimensions and other factors for limit testing the physical parts as well as software upper and lower bounds

H2GO, Chief Technology Officer *July - Aug 2019*

- Startup during a study abroad program that provides filtered water refill machines in Portugal
- Designed multiple prototypes of water refill machine using Solidworks with emphasis on the ideal size, shape, and placement of refill nozzle and recycling container to maximize efficient and convenient consumer experience
- Programmed web app with Google Maps API that would locate nearby water stations and direct users to them
- Conducted customer validation surveys and pitched ideas to potential investors to gather feedback on the startup idea

Windmill Turbine *Feb - May 2020*

- Designed a windmill turbine, given dimensional constraints, to generate ideal energy absorption and strength while taking into consideration factors such as blade shape and size, tower shape and size, materials, and connections for assembly
- Administered stress and deflection analysis in Solidworks to determine maximum displacement and yield stress of the tower under variable loading conditions on force and moment concentrations throughout the design

Keyphone Case *Feb - May 2020*

- Devised an IPhone case with the ability to store retractable keys, made from ABS material and manufactured through 3D printing
- Performed tolerance and fit analysis to control the rotational and frictional properties of the connections between key and case