Bennett Ngan

University of California, San Diego

Aerospace Engineering, B.S.

3.58 Cumulative GPA, Expected 2021

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EXPERIENCE

Mechanical Engineering Intern — San Diego, CA

NewBeeDrone — *October 2018 – Present*

- Design drone frame prototypes with SolidWorks, build proof-of-concept models with SLA and FDM 3D printers
- Improve designs for injection molding manufacturing, create quality check processes for final products
- Analyze Betaflight PID control loop code for improvement over competitors, build and test over 5 different drone prototypes for flight characteristics with varying parameters in Betaflight
- Aid in optimization of order fulfillment through improving warehouse layout and logistics

Drone Class Instructor — Kigali, Rwanda

World Mission Secondary School — *December 2017 – July 2018*

- Created ~35 hours of curriculum for a summer tech camp that was later integrated into the school's IT club
- Taught the physics and engineering of quadcopters and how to build/fly them, including topics such as Proportional-Integral-Derivative (PID) feedback loops, manufacturing, and brushless motor theory

STUDENT ORGANIZATIONS

Design-Build-Fly (DBF) Team Engineering Competition — UCSD

Controls Lead Engineer, Team Pilot — *January 2018 – Present*

- Assisted with composite fabrication, soldering, wiring, battery management, system controls, payload design
- Operated hot-wire cutter for wing prototyping, utilized air vacuum to streamline wing surface
- Designed a continuous-rotation servo driven radome and a high-volume payload dropping mechanism

Students for the Exploration and Discovery of Space (SEDS) — UCSD

Student Mechanical Engineer - Colossus Team — *May 2018 – October 2018*

- Redesigned the calibration system for *Colossus*, a 4500 lb static fire test stand sponsored by NASA
- Engineered a system of pulleys/springs and winch attached to a load cell for increased calibration accuracy

PROJECTS

Scratch-Built Racing Drone — *Ongoing*

- Designed layout, soldered electronics to circuit board, created 3D printed parts and achieved speeds >80 mph, gained knowledge and technical skill regarding: flight controllers, Electronic Speed Controllers (ESC), First-Person-View (FPV) technology, long range telemetry systems, etc.

3D Printing — *Ongoing*

- Assembled a Fused Deposition Modeling (FDM) 3D printer for personal projects, modeled objects in SolidWorks CAD and learned how to configure optimal print settings, currently exploring XFLR5 CFD software

HONORS

- **I-SWEEEP Energy Bronze Medal (Top 1% in region)** - *International science fair*
- **FIRST World Championship Subdivision Finalist (Top 5% in region)** - *FRC Team 2473 robotics competition*

SKILLS

- Machining
- Prototyping
- MATLAB
- Electronics
- SolidWorks
- 3D Printing
- Quadcopters
- Computer-aided drafting

COURSEWORK

- MATLAB Prog. for Engineering Analysis
- Linear Algebra
- Mech I: Statics
- Mech II: Dynamics
- Aerospace Materials Science
- Differential Equations
- Spacecraft Guidance I
- Java