

# Bennett Ngan

University of California, San Diego

Aerospace Engineering, B.S.

3.71 Cumulative GPA, Expected 2021

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## EXPERIENCE

### Controls Lead Engineer, Team Pilot

UCSD

*Design-Build-Fly (DBF) Team Engineering Competition*

*January 2018 – Present*

- Assisted in soldering, wiring, troubleshooting, battery management, payload mechanical engineering/design
- Operated hot-wire cutter for wing prototyping, utilized air vacuum to streamline wing surface
- Flew airplane at competition, 6+ total years of flying experience including radio controlled cars and drones

### Colossus SFS Engineer

UCSD

*Students for the Exploration and Discovery of Space (SEDS)*

*May 2018 – Present*

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

### 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

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## 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 XFRL5 CFD software

### Solar Thermoelectric Generator

*Complete*

- Created a novel solar-energy prototype that converts the sun's radiated heat, rather than light, into electricity
- Utilized phase-change thermal storage technology to maximize energy density and storage capability, proposed vacuum chamber for maximum heat retention in final product, won multiple awards at science fairs

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## 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*
- **CSSF Finalist (Top 10% in fair)** - *Electronics and Electromagnetics Division at state science fair*

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## SKILLS

- MATLAB
- Microsoft Office
- Machining
- Electronics
- Quadcopters
- 3D Printing
- Cura
- Computer-aided drafting

## COURSEWORK

- MATLAB Prog. for Engineering Analysis
- Linear Algebra
- Mechanics I: Statics
- Aerospace Materials Science
- Differential Equations
- Spacecraft Guidance I