John Uy

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EDUCATION

University of California, Irvine   **Graduated Jun. 2025**
Bachelor's of Science (B.S.), Aerospace Engineering   GPA: 3.69

PROFESSIONAL EXPERIENCE

Orbital Exploration Systems (ORBES) - Startup   **Jun. 2025 – Aug. 2025**
Mechanical & Systems Engineer   Los Angeles, CA
- Responsible Engineer for mechanical design & primary/secondary structures of free-flying "ORB" drone product, including system architecture and materials selection across Avionics, ADCS, and Payload subsystems
- Led mechanical analyses (structural, thermal, vibration/modal) on drone vehicle using Simcenter 3D to ensure design soundness under combined thermal & dynamic loading environments
- Designed lightweight ABS secondary structure in Siemens NX with optimized mounting positions to simplify cable harness routing, improve electronics accessibility for maintenance or repair, and support GUI on vehicle
- Applied SWaP-C trade studies to lead design choices such as structure shape, placement of 14-propeller propulsion system, and avionics stack placement to create fully packaged solution for drone product

Rocket Lab   **Jan. 2025 – Mar. 2025**
Mechanical Engineering Intern   Long Beach, CA
- Responsible Engineer for Mechanical Ground Support Equipment (MGSE) of a production level spacecraft
- Owned end-to-end design, analysis, and procurement of 304 & 316 steel weldments which supported integration, reduced assembly time by 15% and enabled repeatable alignment of spacecraft structural panels within ±0.5 mm.
- Developed tooling designs in Siemens NX using DFX principles, and validated design performance through static structural analysis (Simcenter 3D Nastran), GD&T, tolerance stack-up, and bolted joint analysis.
- Wrote a 2-page qualification test plan (QTP) to proof-load MGSE structures at 3x operational loads (~1500 N), ensuring compliance with NASA-STD-5005 and enabling safe first-time use post-vendor delivery for technicians

Collins Aerospace (RTX)   **Jun. 2024 – Dec. 2024**
Mechanical Engineering Intern   Anaheim, CA
- Worked on Pegasus Next Generation Helicopter Hoist by supporting mechanical design through SolidWorks and conducting finite element analysis on components in Ansys Mechanical
- Validated SolidWorks drawing revisions on main hoist production components using GD&T (ASME Y14.5)
- Implemented Weight Calculator budget sheet to collect 1500 components into Excel for total mass validation
- Worked extensively with Neoprene rubber hoist bumper to characterize mechanical properties such as spring stiffness under cyclical loading and creep stress using Larson DHT-2000 Spring Tester & Mitutoyo Height Gauge
- Analyzed loading environments of hoist mounting bolted joints in NASGRO using crack scenario SC-07 to find stress concentrations bolts would fail due to Type 1 fracture crack growth

Sierra Lobo, Inc. (SLI) - NASA JPL Contractor   **Jun. 2023 – Aug. 2023**
Mechanical Hardware & Design Engineering Intern   Pasadena, CA
- Developed 25 fixture and mounting components through Solidworks to fasten optical lenses and electronic cables to run tests through ThorLabs instruments
- Prepared Opto-Mechanical instrumentation and conducted calibration/alignment testing on optical equipment, using either FDM or SLA 3D printing to prepare these components for flight test instruments
- Configured integrating spheres to evaluate different light sources, validating performance metrics such as flux and ensuring compliance with project specifications

SKILLS & STRENGTHS

Software: Ansys Granta, AutoCAD, Autodesk Inventor, C/C++, Confluence, Cura, Fusion 360, Google Workspace, Jira, LabVIEW, MATLAB, Ansys Mechanical, Ansys Workbench, Microsoft Word, Excel, Teams, NASGRO, Python, Siemens NX, Simcenter 3D, Simulink, SolidWorks, Teamcenter PDM
Hardware: Drafting, Geometric Dimensioning & Tolerancing, DFM/DFA, Tolerance Stack Up, Bolted Joint Analysis, Failure Modes and Effects Analysis, Power tools, Mill and Lathe Machining, 3D Printing, TVAC
Strengths: Project/Systems Engineering, Technical Writing/Documentation, Verification & Validation (V&V)