

# Anurag Bonthalapati

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## EDUCATION

**B.S. Aerospace Engineering**, University of Tennessee

**May 2014**

**M.S. Astronautical Engineering**, University of Southern California

**December 2016**

## SKILLS

Advanced proficiency in SolidWorks / PDM, CREO Parametric CAD software, Windchill and Siemens NX. Experience with industry design review processes (SRR, PDR, CDR, TRR), managing review boards, preparing and conducting design review presentations, Proficient in GD&T per ASME Y14.5, MS Office, Knowledgeable in AI Tools like ChatGPT, Claude and Cursor, Python, JavaScript, CSS and HTML

## INDUSTRY EXPERIENCE

### **Redwire Space, Goleta, CA**

#### ***Staff Mechanical Engineer***

**August 2023 – Present**

- Developed and executed a comprehensive test matrix for 10 flight-critical solar array primary structures. Testing achieved 1.25x proof load, ensuring robust hardware performance across 15 years expected life.
- Implemented NASA-STD-5019 fracture control testing program for 40+ critical metallic components, achieving 100% compliance rate and enabling flight certification prior to solar array integration.
- Designed, released and maintained production-ready CAD assemblies containing 1000+ parts in SolidWorks which ensured all program documentation requirements were met.
- Resolved critical hardware design issues through root cause analysis, redesign, rapid prototyping and validation testing of the proposed solution. This ensured final solar array hardware met all program requirements.

### **Northrop Grumman Corporation, Goleta, CA**

#### ***Principal Mechanical Engineer***

**June 2022 – July 2023**

- Led Systems Engineering by providing technical guidance for the build and acceptance testing of NASA CRS UltraFlex Solar Arrays. This resulted in a total of 9 successful on-orbit deployments to-date.
- Served as the primary non-conformance disposition authority for all program discrepancies. Performed detailed Root Cause Analysis and Corrective Actions to ensure timely disposition with minimal impact to cost and schedule.
- Led 48-hour emergency response team to resolve on-orbit solar array deployment anomaly. Analyzed telemetry data across subsystems to isolate root cause and implement recovery strategy that maintained 100% mission success.
- Led new solar array deployment motor shock qualification program. Recovered qualification program after shock failure by leading failure investigation using advanced imaging, proving +3dB test over-conservatism through analysis, and negotiated acceptance of flight-representative testing with primary customer
- Collaborated with cross functional team members to ensure that all aspects of the program meet required customer and program specifications (technical, cost, and schedule).

#### ***Mechanical Engineer***

**March 2019 – June 2022**

- Provided technical oversight for the build and acceptance testing of NASA CRS UltraFlex Solar Arrays.
- Served as the primary non-conformance disposition authority for all program discrepancies. Performed detailed Root Cause analysis and ensured timely resolution with minimal impact to cost and schedule.
- Owned the design and analysis, development and flight qualification of solar array deployment motors, meeting a 2:1 deployment torque margin requirement.
- Supported critical anomaly resolution for NASA Lucy mission solar array anomaly, contributing to root cause analysis that identified snagged lanyard and enabled recovery strategy achieving 100% mission success
- Led the design and analysis, development and flight qualification of large displacement leaf spring mechanisms to provide stiffness and blanket tension to a 24 ft deployed solar array.
- Drove engineering rigor and cost discipline throughout subsystem development, communicating technical progress through design presentations and qualification test plans to cross-functional teams and customers.

#### ***Associate Mechanical Engineer***

**March 2017 – March 2019**

- Designed, developed and flight qualified a high tension, long-life torsion spring mechanism to enable ultra high stiffness solar arrays for low earth orbit
- Designed a high reliability tie-down mechanism to secure primary solar array structure through high G launch loads, achieving 100% deployment success rate across 16 flight units.
- Created and released additional piece-part and assembly drawings per ASME Y14.5 GD&T standards.