Jonathan Reynolds

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EXPERIENCE

Principle CAD & Manufacturing Engineer, ME 463 Auroran Repackaging, West Lafayette, IN 01/2024 - 05/2024

- Led team of 5 through CAD design and manufacturing of capstone project.
- Created and Managed component document tracker and assembly/part hierarchy.
- Designed 67 unique parts and assemblies for FFF 3D printing, manual & CNC machining, and laser cutting.
- Drafted 67 piece-part and assembly drawings following ASME Y14.5-2009 GD&T standards.
- Manufactured and validated 18 3D printed, 1 manual machined, and 6 laser cut parts.
- Awarded Malott Engineering Award (2nd place out of 81 teams).

Mechanical Design Engineering Intern, MAXAR Space Robotics, Pasadena, CA 05/2023 - 08/2023

- Led design reviews and technical interchange meetings resulting in informed and satisfied stakeholders.
- Led assembly and demonstrations of HADES robot arm, resulting in successful project completion and delivery of 7-DoF trade-show robot arm.
- Designed and simulated robot arm configurations, optimizing workspace capability versus mass budget.
- Manufactured fixtures and custom structural piece parts for HADES robot arm.
- Captured and resolved inconsistent part cleaning specifications in ongoing engineering drawings, reducing cleaning costs for LUnA robot arm by 60% and changing assembly location from ISO 7 to ISO 8 cleanroom.

Principle Design & CAD Engineer, ME 444 SW:RV C4, West Lafayette, IN 03/2023 - 05/2023

- Led team of 4 through concept and CAD design of internal mechanisms of BB-8-inspired RC robot toy.
- Designed holonomic tri-omni wheel drive system inside 4” spherical body, resulting in smooth omnidirectional robot movement.
- Won Best Engineering Award (1st of 46 teams).

Undergraduate Researcher, NASA Jet Propulsion Laboratory, Pasadena, CA 06/2022 - 08/2022

- Designed and assembled semi-automatic launch structure for latex high altitude balloons (HABs).
- Tested launch structure for reliable balloon inflation, lift sensing, and automated release.
- Co-authored “Full-scale testing of portable and Automatic High Altitude Balloon Launching Platform.” *2023 IEEE Aerospace Conference*, https://doi.org/10.1109/aero55745.2023.10115690.

Mechatronics Engineering Intern, Nortek Air Solutions, Shakopee, MN 06/2021 - 08/2021

- Designed and built digital twin of data center cooling unit prototype, enabling parallelization of testing and reducing testing cycle time by 30%.
- Debugged and validated programs against a Sequence Of Operations on digital twin, resulting in first successful test of full operation sequence of data center cooling unit prototype.

GNC Team Member, Purdue Orbital, West Lafayette, IN 08/2019 - 05/2021

- Researched and presented various GNC methods for rocket delivering 1U CubeSat, resulting in RCS thruster design decisions for future rockets.
- Designed 3-axis gimbal test stand for future full-scale GNC prototype testing.

SKILLS

Solidworks | Fusion 360 | CREO | NX | Onshape | Computer-Aided Design (CAD) | Design for Manufacturing & Assembly | ASME Y14.5-2009 | Geometric Dimentioning & Tolerancing (GD&T) | Rapid Prototyping | MATLAB | Abaqus | MasterCAM | Solumina | Arduino | LabVIEW | Python | Java/JS | C/C++ | Microsoft Office Suite| Spanish

EDUCATION

Purdue University, West Lafayette, IN 05/2024

Bachelor of Science in Mechanical Engineering GPA: 3.0

Electives: Mechatronics (ME 558) | Intro To Finite Element Analysis (ME 489) | Computer-Aided Design & Prototyping (ME 444) | Principles and Practice of Manufacturing Processes (ME 363) | Engineering Economics (IE 343) | Philosophy of Artificial Intelligence (PHIL 490) | Technical Writing (ENGL 421)

Clubs: Purdue Orbital | Purdue Formula SAE | Purdue Intercollegiate Bowling | Purdue Club Golf

Awards: Malott Engineering Award 2nd Place (ME 463) | Best Engineering Award (ME 444)