XANDER WELLS

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Education

Purdue University - West Lafayette, IN Class of 2024. Expected Masters Class of 2025

Bachelor of Science in Astronautical and Aeronautical Engineering GPA 3.84/4.0

Professional Experience

SpaceX, *Starship RND Manufacturing Engineering Intern* May 2023 – Aug 2023

- Owned design-thru-test of modular seal performance tester (50-600K @ 9ksi). Proofed at ambient & cryo, leak checked at ambient. Cut assembly time 3x. Can test diff. geometries by swapping only 1 part. Allows isolated system measurements
- Created company-wide fixture plate DFX guidelines to eliminate unneeded tools, part features & tolerances, mfg. time & processes, etc. Owned DFM, magnesium sourcing, CAM, machining, etc. for 3x Starship FTS qual. vibe fixture plates
- Drawing checker for new 9-piecepart valve design. Owned GD&T, DFM, mfg. planning, etc. All parts met form & fit reqs
- Procured $2k FDM printer + accessories for drastic 5S upgrades. Created documentation, training, & practical demo parts

Purdue Composite Manufacturing & Simulation Center, *Undergraduate Research Intern* Jan 2023 – Present

- Supporting development of carbon fiber detector segment superstructure for the CMS Large Hadron Collider phase II upgrade, through prepreg carbon fiber layups, ply drape simulations, & machining of CF / graphite filled polymers
- Developing compensation models for deformation of composites during machining due to internal stress redistribution

Pratt & Whitney, *Manufacturing / Industrial Engineering Intern* May 2022 – Aug 2022

- Identified an 80% disparity between actual vs system-reported statuses for 18 PVD machines through extensive system monitoring. Created action plan to improve operator performance by 25%. Automated all associated data entry with VBA
- Developed online time logging system, simplifying a tedious, frustrating task and saving 30-60 minutes / user / week
- Created VBA interface to assist categorization and transfer of 900+ time standards to online management database
- Calculated average lead times of 230,000+ operations across 4 parts & 100+ operation types with VBA. Cut runtime from 1 week to 1 hour, with more accuracy and confidence in output. Will be scaled to the entire Ops & Materials departments

Purdue Bechtel Innovation Design Center, *Manufacturing Teaching Assistant* Oct 2021 – Nov 2022

- Established lab layout, authored $15k+ purchase list, and ideated student workshops for brand-new composites lab
- Represented Purdue as the only university exhibitor at IMTS, the world's largest industrial trade show (115k attendees)
- Conducted Fusion 360 CAM/CAM consults & taught students how to operate 3/5 axis CNC mills & lathes, waterjets, etc
- Cut cost 6-fold and improved workholding capabilities by developing in-house method of machining soft-jaw blanks

Technical Experience

Composites Lead, *Purdue Solar Racing* Dec 2022 – Present

- Coordinated the 2 largest composite layups in Purdue undergrad history - 10ft top & bottom car aeroshells on a $30k mold
- Managed timeline, evaluated execution strategies, & performed 20+ layups / composite processes between Jan-Mar 2022
- Creating mold design, chassis design & analysis, and project assignments needed to complete our next car by April 2024

Composites and Chassis Member, *Purdue Solar Racing* Aug 2022 – Dec 2022

- Built and tested 9 variations of edge-jointed composite panel L-brackets to select the best version for the final car chassis
- Designed and manufactured 2 metal flange insert variants for composite foam core panels. Reduced final part complexity

Skills

Manufacturing - ***Haas / Okuma****:* 3 & 5 Axis Mill, 9 Axis Millturn, Live Tooling Lathe; ***Misc:*** 3D Printing, Waterjet, Shop Tools

Software / Drafting - NX, Solidworks (Certified Solidworks Professional), Fusion 360, CATIA CAM, ESPRIT, GD&T

Programming Languages - JavaScript / React / Tailwind CSS, C#, Python, MATLAB, Excel VBA

Language - Fluent in Chinese Reading, Typing, and Speech