

Nicholas (Cole) Cicora

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Education

Purdue University, West Lafayette, Indiana

Master of Science in Mechanical Engineering

Expected 2027

Bachelor of Science in Aeronautical and Astronautical Engineering

GPA: 3.36/4.0 | May 2025

Professional Experience

SpaceX, Hawthorne, California

Machining Graduate Engineer

May 2025-August 2025

- Implemented on-machine deburring toolpaths onto 3 Merlin TCA parts saving a combined ~185 labor hours per year
- Adapted a Vericut DMG machine model for milling capability to fully simulate CAM to catch hand-edit G-code errors
- Wrote 2 Engineering Change Tickets for tolerance expansions saving ~\$280,000 per year in engineering review hours
- Reformatted Work Instructions on 5 parts for readability and clarity with NX CAD screenshots of highlighted features
- Updated Test Plans for 5 parts with auto-Issue Ticket generation scripting logic to save inspector time creating tickets
- Programmed and machined a TCA Qualification Test Article with modifications for instrumentation on a DMG mill-turn
- Coordinated with deburr techs to mark time-consuming burr as allowable by getting measurements and buyoff from RE
- Consulted tooling providers for inserts to reduce tool breakage and cycle time by ~30% saving ~85 labor hours per year
- Modified part CAD for CMM programming to delete a romer arm operation and covert it to the table CMM operation
- Designed and made fixture for probe calibration, DMG 3D quickSET, and PC-DMIS inspection for machine upkeep

Maurice J. Zucrow Labs, West Lafayette, Indiana

Undergraduate Research Assistant

May 2023-May 2025

- Operated Rotating Detonation Engines via LabVIEW VI for 6 test campaigns over hundreds of hotfires
- Designed and analyzed stress in a flange component for a vitiator combustor to verify bolt strength with ANSYS
- Produced ASME Y14.5 drawings for 10+ parts to convey design intent and ensure fit during assembly with tolerancing
- Modelled fluid panel with 11 lines of gaseous fuel, air, and oxidizer lines and sourced fittings, valves, and regulators

Bechtel Innovation Design Center, West Lafayette, Indiana

Machining Peer Mentor

August 2022-December 2024

- Trained in operation of Haas VF-2/VF-4 CNC mills, Haas ST-20/Y lathes, FLOJET waterjets, and bandsaws
- Consulted with students on design of parts, CAM optimization, and machine availability to complete projects
- Instructed members on proper speeds and feeds for solid carbide and HSS tooling to maximize tool lifetime
- Utilized advanced manufacturing techniques such as 5-axis milling and live-tooling on lathes for complex geometry
- Wrote SOPs for CNC machines to better train new students and explain the most essential operations of each machine
- Performed weekly maintenance on machines to upkeep tolerances and steady operation with minimal downtime
- Compiled accurate documentation on 20+ workholding methods for BIDC website to communicate capabilities
- Developed complex workholding methods to maintain rigidity and proper surface finish on parts

Technical Team Experience

Purdue Space Program Liquids Team, West Lafayette, Indiana

Manufacturing Lead

January 2023-May 2025

- Formed subteam to oversee the manufacturing of a liquid-fueled rocket aiming for 50k+ feet in altitude
- Approved all CAM to prevent machine crashes and make sure parts meet desired specifications and tolerances
- Machined tough materials such as 718 Inconel and 321 stainless steel with specialized carbide tooling
- Developed manufacturing plans ahead of vehicle design reviews so parts stay within machine and tooling capabilities
- Coordinated part manufacturing flow and resource allocation for subteams to ensure timely production
- Post-machined 3D printed propulsion components such as the injector to enable proper sealing and correct dimensions
- Created detailed slide decks and Confluence pages to serve as comprehensive CAM learning materials
- Assigned JIRA tasks to track progress and keep engineers accountable for the manufacturing of assigned part
- Supervised production of 50+ parts and resolved machine and CAM issues to prevent stoppages and scrapped parts

Skills

Siemens NX | MATLAB | Microsoft Office | Fusion 360 CAM | JIRA | Confluence | GD&T | ANSYS Mechanical | Vericut | HyperMILL