

# Nicholas Cicora

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## Education

**Purdue University**, West Lafayette, Indiana

Bachelor of Science in Aeronautical and Astronautical Engineering

Dean's List

May 2025

GPA: 3.36/4.0

August 2021-May 2023

## 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