AHREN BECKER

MECHANICAL ENGINEERING STUDENT | EXPECTED MAY 2028

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Mechanical engineering student with hands-on design, fabrication, troubleshooting, and failure analysis experience. **2024 national-championship football team member**, bringing coachability, teamwork, and clear communication.

EDUCATION

North Central College | Naperville, IL — **Expected May 2028**
Bachelor of Science in Mechanical Engineering | Minor: Business Economics
Honors: Dean's List (Spring 2026); CCIW Academic All-Conference (2025)
Coursework: Mechanical Design, Materials, Microcontrollers, Dynamics, Electromechanics

COURSEWORK PROJECTS

SureShift Transmission | Team Coursework — Spring 2026
- Co-designed and assembled a transmission with four forward ratios and reverse; authored the complete **18-page engineering drawing package**.
- Tested **40+** 3D-printed polymer gear prototypes to refine fit and shaft alignment; the team earned full mechanism credit, one of two to do so.

AeroVolt Wind Turbine | Team Coursework — Spring 2026
- Replaced a failed belt drive with a direct generator connection, helping the team achieve **1st in class** for power output at **nearly 3 times** the next-best result.
- Designed SolidWorks components and technical drawings; helped fabricate and assemble the turbine.

PERSONAL & INDEPENDENT PROJECTS

2017 Ford Mustang GT | Personal Automotive Engineering
- Integrated powertrain, intake/exhaust, braking, suspension, wheel/tire, steering, aero, interior, and electrical modifications; checked compatibility and diagnosed mechanical issues.
- Refined **ECU calibrations** through **flashing, datalogging, and tuning**; maintained and troubleshot other vehicles.

Desktop Companion | Independent Design & Build — 2026-Present
- Built a 3D-printed desktop controller with a display and three multifunction buttons; linked C++ and Python for live PC monitoring, four control screens, and media/volume commands.

NANO DEFENDER Mobile Robot | Independent Design & Build — Spring 2026
- Built an Arduino Nano robot with Bluetooth smartphone control and a 3D-printed housing; integrated motors, steering, a display, and distance-based stopping in C++.

RUNTIME | Game Development & Marketing — 2026-Present
- Developed RUNTIME in GameMaker/GML, integrating gameplay systems, a level editor, UI, and Steam multiplayer.
- Refined movement, controls, and multiplayer through playtest feedback, debugging, and regression checks.
- Created Steam store copy, trailers, screenshots, and a game website to explain features and support marketing.

TECHNICAL SKILLS & PROJECT PLANNING

RFPs & planning: Translate requirements into RFP responses, statements of work (SOW), work breakdown structures (WBS), budgets, Gantt charts, and timelines.
Design & prototyping: SolidWorks CAD, part/assembly modeling, technical drawings, fit testing, and mechanical troubleshooting.
Additive manufacturing: FDM 3D printing with **PLA, PETG, TPU, and carbon-fiber-reinforced nylon (PA-CF)**.
Electronics & analysis: C/C++, Python, Arduino, sensors/motors, Bluetooth; Excel, data analysis, technical reports.

LEADERSHIP & EXPERIENCE

Math & STEM Tutor | Self-Employed — 2026-Present
- Develop individualized lessons and explain technical concepts clearly to build students' problem-solving skills.

Photography Specialist | Dynamic Photo Systems & Event Photography — 2017-Present
- Photograph and edit university events for Northwestern and Northern Illinois; maintain reliable client delivery.

North Central College Football | Tight End — 2024 Season
- Member of the **2024 NCAA Division III National Championship team**; balanced engineering coursework with training, competition, and accountability to teammates.