COLE ABBOTT

Mechanical Engineer

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PROJECTS

Baja SAE

Manufacturing Lead, ECVT Lead

📅 Fall 2022 - Current

- Designed and manufactured housing for differential
- Lead the design and prototyping of an E-CVT, a new component our team had never made before
- Designed control system for E-CVT, integrating sensing and motor control to keep the engine at its peak power

E-skin research project

HAND ERC Northwestern

📅 Spring 2025

- Wrote firmware for a PIC32MZEF microcontroller using the Harmony developement environment for an acoustic E-skin for a robotic hand
- Utalized High-Speed ADC with DMA, and USB to send data to a PC
- Delivered functional prototype based on PIC32 developement board

Injection Molded Boat Toy

ME 340-2: Computer Integrated Manufacturing II

📅 Winter 2025

- Designed a toy boat to be injection molded.
- Modeled and machined molds on a 3-axis CNC machine.
- Injection molded a production run of 50 parts within tolerance.

QuackTrack Robot

EE 327: Electronic System Design II project

📅 Winter 2024

- Designed and prototyped a robotic duck toy to detect and follow a person.
- Used websockets to send an image to a server for processing. Implemented real-time motor control via PID on an IMU feedback loop, achieving smooth and responsive motion.
- Built a fully functional prototype with a multicolor 3D printed housing and rechargeable Li-ion battery

EDUCATION

M.S. Mechanical Engineering

Northwestern University

📅 Winter 2026 – Current

Robotics and Controls Specialization
BS MS Program

B.S. Mechanical Engineering

Northwestern University

📅 Sept 2022 – Current

Robotics Concentration
Cumulative GPA: 3.92

WORK EXPERIENCE

Shop Trainer

Northwestern University

📅 Spring 2023 – Current

- Train students on basic tools, Mill, and Lathe
- Provide design and manufacturing advice to student groups

Trip Leader

Overland Summers

📅 Summer 2024, 2025   📍 Colorado, Wyoming

- Lead outdoor hiking trips for 9-13 year olds
- Teach outdoor skills
- Keep students safe and manage risks

STRENGTHS

Solidworks CAD   NX CAD/CAM/FEA

CNC and Manual Machining

Injection Molding   Rapid Prototyping

C/C++   Embedded Systems   Python

MATLAB