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Objective

I am seeking a summer internship to exercise my mobile robotics experience in a professional context

Experience

- **Integer** — Chaska, Minnesota
  Manufacturing Engineering Intern — *Summer 2025 & Summer 2026*
  - Created a reusable Ladder Logic driver for Oriental Motor drives
  - Built a machine start to finish from AutoCAD and SolidWorks schematics, including electrical and mechanical assembly
  - Designed and optimized Aluminum, Delrin, Steel, ABS, Lexan, ect. parts using SolidWorks Simulation FEA
  - Coordinated internal and external fabricators, accounting for capabilities and capacity
  - Programmed Universal Robotics cobots with URScript to communicate and avoid obstacles while transiting dynamically generated paths
  - Designed application specific Robotiq end-effector fingers
  - Integrated a Keyence telecentric measurement system for automated inspection
  - Improved automation for key repetitive processes within the design and machine build organizations
- **VSI Labs** — St Louis Park, Minnesota
  Automated Vehicle Solutions Intern — *Summer 2023 & Summer 2024*
  - Designed and implemented a CAN device driver for an automotive radar system from its datasheet
  - Worked on a team to implement data acquisition on a mobile phone that previously required a NI PXI system
  - Augmented a mobile data acquisition system to use hardware video encoding, eliminating thermal bottlenecks with mobile hardware
- **Infinity Robotics** — Savage, Minnesota
  Intern — *Summer 2022*
  - Trained on a Universal Robotics arm and vision system
- **Talon Robotics** — Eden Prairie, Minnesota
  Programming Lead — *2022-2024*
  - Trained and led teams of five to ten programmers to compete in the high school FIRST robotics competition
  - Created a FRC Rust framework, becoming the only FRC team in the world to run Rust in 2024
  - Implemented a holonomic odometry system using eight wheel encoders and vision data
  - Designed and tuned a system to shoot a ball into a basket with an OpenCV vision pipeline
  - Crafted custom feed forward control terms to account for rolling resistance, gravity and voltage sag
  - Created a trapezoidal velocity controller paired with a PID to minimize following error for heavy robots

Education

- **Worcester Polytechnic Institute** — Worcester, Massachusetts
  Pursuing Bachelor of Science in Robotics Engineering (Class of 2028) — *Fall 2024 – present*

Projects ank.dev/projects

- **GDevConNA 2025 Breakout session** : Led a 45 minute breakout session about integrating Rust with LabVIEW
- **Indoor delivery robot** : Wheeled mobile robot for the MassRobotics Form and Function challenge
- **Automatic combat robot** : One pound semi-autonomous combat robot for the WPI combat robotics club
- **Dorm door opener ank.dev/projects/door** : Internet accessible door opener secured with a reverse proxy
- **Dreamcast git.ank.dev/ank/dccake** : Rust graphics tech demo for the Sega Dreamcast
- **Despro ank.dev/projects/despro** : Virtual microcomputer implemented with the Desmos graphing calculator