Francis Qin

U.S. Citizen | (484)-886-8107 |qin.f@northeastern.edu | Boston MA | Malvern PA | Availability: Jan – Aug 2027

EDUCATION

Northeastern University Boston, MA
B.S. in Electrical and Computer Engineering, 3.6 GPA April 2028

Relevant Coursework: Circuits and Signals, Fundamentals of Engineering Algorithms, Fundamentals of Networks, Embedded Design/Enabling Robotics, Differential Equations & Linear Algebra, Physics II, Computing Fundamentals for Engineers

Activities: Club Tennis (Player), American Society for Mechanical Engineers (Student Engineer)

WORK EXPERIENCE

Piotech Inc. Shanghai, China
Electrical Engineering Intern May 2026 – Aug 2026

- Designed and iterated **CAD** models in **SolidWorks**, including a car engine assembly, refining part geometry and assemblies across multiple design revisions to meet manufacturing tolerances
- Performed maintenance and troubleshooting on production machinery for **PECVD and ALD** thin film deposition systems used in **semiconductor manufacturing**, supporting equipment uptime on the production floor
- Collaborated with engineers and mentors to understand system-level **operation of deposition tools,** from process chambers to control subsystems, and applied that knowledge to daily troubleshooting
- Evaluated **semiconductor equipment** localization **trends** in China, including competitive positioning against NAURA, AMEC, and international suppliers, to contextualize the company's market strategy
- Documented **equipment specifications, maintenance procedures, and testing results** to support internal engineering records and knowledge transfer to future interns
- Shadowed cross-functional teams across **manufacturing, quality control, and R&D** to gain a broader understanding of semiconductor equipment production workflows

PROJECTS

Servo-Powered Robotic Arm | SolidWorks, Raspberry Pi Pico, 3D Printing May 2026 – Aug 2026

- Designed and iterated **CAD models** of a servo-powered robotic arm in SolidWorks, refining **part geometry and assemblies** across multiple design revisions
- 3D printed the full robotic arm assembly on a **Bambu Lab printer**, validating fit, range of motion, and structural integrity before final assembly
- Programmed a **Raspberry Pi** Pico to control **servo motors** driving the robotic arm, enabling coordinated joint movement and testing motion sequences
- Calibrated servo positioning and motion sequencing through iterative testing to improve precision and repeatability of arm movements
- Documented design iterations and testing outcomes to guide future improvements to the arm's mechanical and control systems

Tabletop Board Game | SolidWorks, AutoCAD, Laser Cutting, 3D Printing Oct 2025 – Dec 2025

- Led end-to-end development of a fully functional tabletop game for **2+ clients**
- Produced complete CAD package (part models, assemblies, and manufacturing drawings) in **SolidWorks/AutoCAD**
- Ran iterative prototyping cycles using **3D printing and laser cutting**, refining geometry and assembly based on playtesting feedback and failure points
- Drove design reviews within a 3-person team by documenting decisions, testing outcomes, and revisions to converge on a client-approved final prototype

SKILLS

Applications: SolidWorks, AutoCAD, Quartus Prime, LTspice, 3D Printing, Laser Cutting, MATLAB, Raspberry Pi Pico, DE1-SoC
Certifications: Solidworks (CSWA)
Languages: Mandarin Chinese (Proficient)
Lab Equipment: Digital Multimeter, Oscilloscope, Function Generator
Operating Systems: Linux, Windows
Programming Languages: Python, Java, C++, Kotlin