

Baaqer Farhat

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Summary

Passionate about robotics engineering, with a track record of leadership in international competitions and prestigious awards. Particularly interested in robots/manufacturing, EVs, and mechatronics.

EDUCATION

California Institute of Technology

EE / Robotics Engineering with minor in Control Systems and Dynamics

Pasadena, CA

Sept 2023 - Present

SKILLS

- | | | |
|-----------------------------|----------------------------|---------------------------------|
| ○ Python/Java Programming | ○ Gazebo Robot Simulations | ○ JMOL Protein Modeling |
| ○ 3-D printing (gcode) | ○ PID controller | ○ Soldering / Quick Prototyping |
| ○ Solidworks/Fusion/Onshape | ○ Wiring/Electronics | ○ PLC Programming |
| ○ Robot Arms (FANUC) | ○ Microcontrollers | ○ CNC Machining |
| ○ Altium/KiCAD: PCBs | ○ Matlab/Simulink | ○ Communication/Leadership |

HIGHLIGHTED COURSE WORK

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|------------------------------------------------------|------------------------------------------------|
| ○ EE 10: Digital Logic and Embedded Systems | ○ CS 1: Python and Java Programming |
| ○ ME 129: Experimental Robotics (ROS) | ○ Vue.js Certificate: LinkedIn Learning |
| ○ ME 13: Prototyping (Solidworks and CNC) | ○ Android App Development With Java |
| ○ EE 13: Electronic Systems Prototyping | ○ 1 Month Robotics Challenge |
| ○ Altium Training: Caltech Racing (FSAE) Team | ○ Intro to Def/of Hacking Certificate |

Internships and Awards

- **Avalon Robotics Engineering Internship (Spring 2024):** Worked on autonomous manufacturing through mechatronics projects and FANUC Robot arm
- **CPS Office of Computer Science Robotics Summer Internship (Summer 2023):** Group leader for building and programming a mecanum robot chassis
- **Morningstar Summer Internship (Summer 2022):** Front-End Developer on Institutional products team
- **United by STEM: One Team, Two Continents (Fall 2023):** Robotics mentoring in South Africa
- **FIRST Robotics:** Deans List Award (Midwest): First place in State for student leaders
- 2x FTC Chicago City Championship (robotics): Best FTC team in City
- FTC Chicago City Control Award: Most advanced robot design
- FRC Midwest Regional Judge Award and Inspire Award

Projects

- RFID Inventory System for autonomous manufacturing
- Automatic Coolant/water Pump for CNC automation through PLC NEXTEngineer
- KRYTN and MACI Robot Arm ROS programming and integration
- Spinning Drone paradox (built drone from scratch to save energy consumption)
- Multipurpose probe (Designed Schematic, PCB, and Assembled)
- PID Self Balancing Robot (ran Simulink simulations)
- Odometry localization
- FRC Chassis (gearbox assembly, wire harness, etc) and Ball Shooter Actuator
- FTC Cone Delivery Robot
- International Robotics Mentor Through One Team, Two Continents Project