

# NICHOLAS PAIVA

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Pittsburgh, PA

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## Education

2020 Carnegie Mellon University • Pittsburgh, PA • 3.84 GPA  
Bachelor of Science in Electrical and Computer Engineering, Secondary Major in Robotics

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## Work Experience

2017- Present Research Assistant • Carnegie Mellon Biorobotics Lab • Pittsburgh, PA

- Currently designing a system to track robot position and energy usage
- Designed miniaturized PCBs for ultrasonic sensing and voltage regulation applications
- Evaluated and developed with TI mmWave technology, experimental 76-81GHz radar
- Implemented UART communication for the ATtiny 85 in AVR assembler with 34 word program

2016- Present System Lead • Carnegie Mellon Racing • Pittsburgh, PA

- Electrical system lead for multiple power distribution and tractive systems
- Reverse engineered, documented, and reorganized an old design for increased clarity
- Worked on a team to assemble the battery pack for the car, 6.8kWh and 300VDC nominal
- Tested and collected data on different Li-ion cell types measuring temperature, capacity, etc.

Summer 2018 Electrical Engineering Intern • Deeplocal • Sharpsburg, PA

- Designed, prototyped, and assembled PCBs under multiple constraints for custom lighting
- Optimized firmware for Cypress PSoC, improving performance by a factor of 4
- Created 3 libraries for WS2812b addressable LEDs, stepper, and servo motor control
- Selected as well as tested motors and motor controllers based on mechanical requirements
- Designed and manufactured a testing apparatus for chosen motors and drivers
- Debugged hardware and firmware for show control and power supply

Summer 2017 Stem Camp Instructor • iD Tech • Los Angeles, CA

- Taught classes for children aged 10-17 on Linux usage, computer hardware, programming, photography, and web design

Summer 2015, 2016 Programming Intern • Kirusa Inc. • New Providence, NJ

- Benchmarked and compared 4 APIs for speech recognition on accuracy and efficiency
- Implemented features for an Android app based on design documents

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## Skills

PCB/Hardware Design

CAD Experience

Programming

Fabrication/Prototyping

Altium Designer • Altium CircuitStudio • PSoC Creator

AutoCAD • Autodesk Inventor • Fusion 360 • 3ds Max

C • Assembly • Java • Python • C++ • Android • SQL • LUA

Laser Cutting • PCB Milling • CNC Routing • 3D Printing • Soldering