Anthony Ibarra | Electrical & Computer Engineer

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Professional Profile

Aiming for growth in self skills, and seeking a position that improves upon my current skills, and also teaches new useful skills for future situations. I am someone who has an interest in learning and improving. I am a hard worker, even more so when it involves my own personal interests. I desire to increase the quality of what I enjoy being a part of, as someone that strives to be an Engineer that is complete and efficient in their work to bring out the growth to what we as Engineers put our hands on, on a daily basis.

Core SKILLS

- Soldering
- Testing
- Troubleshooting
- Problem Solving
- Creativity
- Designing
- Planning
- Leadership
- Motivation
- Management

Career Summary

Jan 2023 - May 2023 Mechatronics Embedded Design Project

Self Driving Car

Lead a team of 4 to design and develop an RC car to follow a line on a track. The car includes a DC motor for the four wheel drive, Servo for steering, and a Line camera for track detection.

- Lead the team and manage all time constraint task, development and design task, make timely decisions for the team's success
- Develop a motor controller with a FET Driver implemented, a controller from either of (single fet, half bridge,or full H-bridge), and gets controlled via a PWM input signal from the microcontroller

- Develop a Boost Converter DC-DC for the power systems
- Develop and tine a PD controller for the steering, and a P controller for the velocity controller
- Design a circuit through Altium Designer and get it manufactured
- Create a perf board circuit as a backup board for the pcb
- Solder all surface mount and through hole components onto the printed PCB board
- Implement a filter for the line Camera or velocity measured input
- Implement Sensors and Encoders

Aug 2021 - May 2022 UIC Senior Design

Automated Watering System

Work in a four-student team to prototype a device that water specified plants by taking moisture levels, outdoor weather conditions, and plant information into account.

- Manage team to make sure all assignments are done on time and completed, and submit weekly assignments based on progress of project development.
- Program Arduino Nano iot 33 to decide whether to water or not water plants based on moisture levels
- Create APP (Kivy a python framework was used) to show information regarding the system, plants and weather
- Program a UDP client-server communication between Arduino and APP

Volunteer Summary

Aug 2017 - Present Table Tennis Club member

UIC recreation center

Assist with opening, closing, and setting up equipment for club activities. Help with practice and training for future tournaments or events when possible.

2014 - 2017 Volunteer (volunteered 3 times)

HighSchool Heroes Program

The process of teaching 1st-3rd graders about society through a specified curriculum composed into four sections. Volunteers are placed in a group of 3 to complete said curriculum in a concise time frame for each section.

Education & Qualifications

UIC, Chicago IL — M.S Jan 2023 - Present

Masters of Science in Electrical & Computer Engineering, ECE

Relevant Coursework:

- Intro Neural Networks, Mechatronics Embedded Design, Convex Optimization, Advanced Computer Communication, Electromagnetic Compatibility, Linear Systems

UIC, Chicago IL — B.S Aug 2017 - May 2022

Bachelors of Science in Computer Engineering, ECE

Relevant Coursework:

- Artificial Intelligence I, Data Structures, Foundation of Computing
- Principles of Modern Control, Principles of Auto Control, Robotics: Algorithm & Control
- Embedded Systems, Comp organization, Advanced comp architecture, Intro VLSI design
- Pattern Recognition I, Computer Comm Networks I, Probability and Rand Proc for eng

Additional

Interests:

- Artificial Intelligence
- Machine Learning
- Deep Learning
- Neural Networks
- Programming
- Robotics
- Automation
- Research
- Development
- Design
- Embedded & Control systems
- Power Efficiency
- Cost Efficiency
- Hardware Security

Hardware used:

Equipment:

- Oscilloscope
- Multimeter
- Function Generator
- Waveform Generator
- PowerSupply
- Soldering Tools

- Breadboard
- Microcontrollers
- Keysight N9912A(FieldFox RF analyzer)

MCU:

- Tiva C launchpad TM4C123G
- Arduino Nano 33 IoT
- Raspberry pi (alpha bot)
- Freescale FRDM-KL25Z

Programming Languages:

- Python
- C/C++
- Assembly
- CSS
- Html
- JavaScript
- Rust

Software used:

Programming:

- VS Code
- GitHub
- Git
- Ubuntu(WSL)
- Docker
- Spyder
- Normal understanding of Microsoft Word, PowerPoint, Excel

Embedded:

- Code-Composer studio
- Kinetis design studio
- Arduino IDE
- Mars 4_5
- VNC viewer (raspberry Pi)

Circuit design:

- Altium Designer
- Quartus
- Flux

Simulation & Design or Development:

- MATLAB
- Solidworks
- Mathematica
- Design Spark
- Blender

PLC(Beginner; self taught):

- RSLogix Micro
- RSLinx Classic
- RSLogix Emulate 500

Database(Beginner; self taught):

- mySQL
- SQL

Hobbies:

- Repairing (disassembling and reassembling electronic parts / devices)

- Table-Tennis, video games