Martin Carballo Flores

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Web Development | Web Design | Robotics | Python Developer

Electronics and software engineer with a combination of knowledge and experience in software engineering, web design and networks . Adept at gathering knowledge and skills in order to improve efficiency, develop new ideas, designs, prototypes, estimates, and maintain standards. Proven ability to adapt to new fields. Ability to solve technical problems and ensure system and application performance, according to technical specifications.

1. *Computer Science*
2. *Python*
3. *HTML 5*
4. *CSS 3*
5. *React*
6. *JavaScript*
7. *MySQL*
8. *Linux*
9. *Raspberry pi 3*
10. *Micro controllers*
11. *PCB design*
12. *Debian OS*

PROFESSIONAL EXPERIENCE

Educational website | Remote — 08/2024 – present

- Designed a website for online courses using Figma.
- Development of the website using HTML5, CSS3 and JavaScript. No frameworks used, since the website was used as the use case and the purpose was to teach how to build a website using the basics.
- Design of the courses and content writing.
- Deployment of the website on GitHub pages, https://sinople-lab.github.io/firstPage/

WordPress Web page | Remote — 03/2022 – 03/2022

- Designed a website for promoting my design and development services.
- Design and editing content for the web pages.
- Published the website on https://slnople.wordpress.com/

Data Base for Music studio | Remote — 02/2022 – 03/2022

- Developed and designed a website for a music studio for consulting and updating information about the royalties owned to the singers and composers.
- Developed the Backend on Django, using SQLite.
- Communicated effectively with stakeholders and non-technical partners.
- Developed the frontend on React (typescript). The website ran on a local environment in the company intranet.

Web development Portfolio | Remote — 09/2021 – 09/2021

- Designed a landing page to showcase my web development portfolio.
- Developed the website using HTML5, CSS3, W3.CSS framework and JavaScript.
- Wrote the content of the page and edited the images.
- Deployed of the website on GitHub pages, https://sinople-lab.github.io/home/

Online Video games shop | Remote — 02/2020 – present

- Designed websites for selling my own video games.
- Designed the web pages layout.
- Designed and edited the content for the video games pages.
- Published the website on https://sinople.itch.io/
- Development of: https://sinople.itch.io/sinoplerunner, https://sinople.itch.io/processing-art, https://sinople.itch.io/accel-migsuf & https://sinople.itch.io/mad-migsuf

Video Games Development | Remote — 01/2020 – 01/2021

- Designed video games and designed the assets used in the games.
- Developed games on Unity engine, using C#.
- Debugging and research.
- Published the video games on https://sinople.itch.io/

Path Following Implementation for Terrestrial Drones | Universidad Veracruzana 06/2020 – 01/2021

- Developed an implementation of a path following method for video games on a terrestrial drone which uses Resistive Grid Method as path finding.
- Tested the path finding algorithm on Python, using Pygame to visually simulate the results.
- Successfully simulated the path following method, developed by Craig Reynolds (https://www.red3d.com/cwr/papers/1999/gdc99steer.html), working with the Resistive Grid Path Planning Method.
- Developed the robotic prototype for this project, using Raspberry Pi 3B+ and Arduino Uno.
- Successfully implemented and tested the path following method on a terrestrial drone.

Path Planning Implementation for Terrestrial Drones | Universidad Veracruzana 03/2019 – 06/2019

- Developed an implementation of Resistive Grid Path Planning Method for a terrestrial drone.
- Developed and tested an terrestrial robot with omnidirectional wheels. I used a Raspberry pi 3B+ and Arduino Mega.
- Implemented a PID control on AVR to control the speed of the motors.
- Successfully replicated the Resistive Grid Path Planning method on C++ and Python 2.7. On Python I used Pygame to visually simulate the results and Numpy to manage the matrix of nodes that I used to model the environment.
- Successfully implemented and tested the path planning method on a terrestrial drone.

Research assistant | Universidad Veracruzana 10/2018 – 01/2019

- Implemented numeric methods such as Newton-Raphson and Gauss-Jordan to solve differential equations from math research.
- Implemented Homotopy method on C++ to solve differential equations.
- Implemented Spherical Continuation method using C++ and Java in order to use Homotopy method as path planning method for robotics.

Education

Electronic Instrumentation | Universidad Veracruzana. Xalapa, Mexico. 08/2011 – 01/2016

Master on Computing | Universidad Veracruzana. Xalapa, Mexico. 08/2018 – 01/2021