

Daniel Smith-dePaz

Software Engineer

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SKILLS

Spanish, Python, Bare Metal, PIC, Microcontrollers, JTAG-debugger, Oscilloscope, Logic Analyzer, C, C++, I2C, ISR, Hard RS232 Serial, CSI2-MIPI, Linux, Jetson Nano, Python, Automated Tests, Hardware Integration, Hardware Validation, Jira, Atlassian, C#, .net, WPF, QT, UI/UX, Cameralink, Multithreading, Git, BugTracking, ARM, FreeRTOS, Github, OrCAD, ECR/ECN, Schematics, React, Typescript, JS, HTML, CSS, observers, SQL, 3D CAD Design, OSAL, ThreeJS, React Three Fiber, Unreal, Blender, HLSL, API, Orbital Mechanics, Django, Lua, Steam API, Sensors, AutoCad Inventor

PROFESSIONAL EXPERIENCE

Lynred USA, Fairfield NJ - *Software Engineer*

MAR 2021 - Feb 2024

Skills: *Bare Metal, PIC, JTAG-debugger, Oscilloscope, Logic Analyzer, C, C++, I2C, ISR, Hard RS232 Serial, CSI2-MIPI, Linux, Jetson Nano, Python, QSL, Database Design, Automated Tests, Hardware Integration, Hardware Validation, Jira, Atlassian, C#, .net, WPF, QT, UI/UX, Cameralink, Multithreading, Git, BugTracking, Sensors*

- Lead firmware design for a MIPI-compliant Infrared camera.
- Responsible for feature implementations, system validation, and automated testing.
- Convert a loose set of requirements into an actionable plan, and execute it.
- Implement an ISR to handle I2C commands from a master device.
- Debug hardware and software issues using an oscilloscope.
- Document the implemented features, user interfaces, and register map.

MSA Safety, Cranberry PA - *Software Engineering Coop*

SEP 2019 - DEC 2019

Skills: *Bare Metal, ARM, FreeRTOS, C, Logic Analyzer, Serial, UI/UX, Github, Git, Jira, Atlassian,*

- Work closely with domestic and international team members.
- Design and implement a Menu UI on a microcontroller written in C. Interfacing i/o with an OSAL.
- Create development debug tools to improve developer quality of life.
- Optimize packet transmissions to an LCD peripheral to increase performance by 50%.

Hydroid Inc, Cape Cod MA - *Electrical Engineering Coop*

JAN 2019 - APR 2019

Skills: *OrCAD, ECR/ECN, Schematics*

- Reduce labor costs by assisting in the modularization of product development.
- Peer review schematics pending implementation.
- Create new schematics based on ECR/ECNs.

EDUCATION

Wentworth Institute of Technology, Boston MA - *BA Computer Engineering*

SEP 2016 - AUG 2020

Operating Systems, Digital Signal Processing, Analog Circuit Design, Advanced Digital Circuit Design, Computer Architecture, Database Management Systems, Internet of Things

PROJECTS

Deep Impact - *Fall In, Galactic Vets Hackathon*

May 2024

Skills: *API, Orbital Mechanics, React, JS, Python, Github, Django, UI*

- Achieved 1st place by deploying a working prototype within 48 hours using React frontend and Django backend.
- Team Lead of the development of an educational website to teach general audiences about asteroid collisions and Earth's defense capabilities, featuring a simplified orbital mechanics simulation and collision scenarios using NASA's Sentry API data.

Personal Website - *Personal Project*

AUG 2022

Skills: *React, HTML, CSS, JS, Typescript, React Three Fiber, ThreeJS, Blender, HLSL, API, UI*

- Designed a novel 3D personal website/tech demo using ThreeJS and React.
- Combine UX/UI Principles and skeuomorphism to create an intuitive user-friendly 3D Website. Intended as a vertical slice that incorporates self-taught design principles.
- Design/Optimize 3D models in blender to maximize performance in web-browsers on mobile and desktop.

<https://www.dandepaz.net/>

Silbo Gomero Audio - *Linguistics project*

AUG 2021

Skills: *Audio processing, Python, Digital Signal Processing*

- Work internationally with linguistics experts to help preserve an esoteric whistling language.
- Research the fundamental mechanics of the language and design an algorithm to use spectrogram analysis to convert whistled speech into readable images for education.

Discordbot - *Personal Project*

SEP 2020

Skills: *Python, discord api, twitch api, UX, gamedesign, sound design,*

- Create a personalized entertainment bot using discord python api.
- Features a wide swath of commands that attempts to leverage creativity and push the boundaries
- Customize and design audio files with specific goals of enhancing user experience.

AI Circuit design - *Senior Design*

AUG 2020

Skills: *Hardware Design, Digital Logic, Machine Learning, Q Learning, Python*

- Compare the viability of two machine Learning algorithms competency at creating gate-level circuits.
- Create and implement a Q-learning AI that utilizes Monte Carlo policy evaluation.
- Link to presentation:

https://digitalcollections.wit.edu/uncategorized/IO_291b6182-8039-4db8-a701-0e380c415f46/

Random Robes - *Personal Project*

FEB 2020

Skills: *Python, Lua, Color Theory, Steam API*

- Release a publicly available free mod to a PC game: Noita.
- Institute a system in python to autonomously: randomly generate color pallets while ensuring uniqueness, create custom 2d character models, and update Lua code of the game files.
- Over 50k concurrent users.

BasilESC - *Personal Project*

APR 2018

Skills: *C, Arduino, Microcontrollers, Hardware Integration/Validation, Game Design, UI*

- Develop a dungeon crawler game in C, running on an Arduino Uno with a 16x32 LED display and NES controller. Player attempts to escape a giant snake and make it to the exit.
- Features: Procedurally generated Levels, player customization , boss Levels, wall breaking and teleporting mechanics.

Vex Robotics - *Skills USA Competition*

MAR 2015

Skills: *C, Robotic Software and Mechanical Design, Sensors, UI*

- Employ the engineering design process to research, design, and test a robot programmed using C. All while maintaining documentation in an Engineering notebook.
- Wire and configure onboard sensors, motors, and communication modules.

FTC Robotics - *First Tech Challenge*

MAR 2013

Skills: *C, Lego Mindstorm NXT, Sensors, UI*

- Brainstorm competition strategies and formulate functional designs to support them.
- Responsible for programming system sensors, and user control.
- Collaborate with engineers from different teams to achieve a unified goal.

MISC

- FCC Licensed Amateur Radio Operator callsign: KD2GVE
- ADDA Certified Mechanical Drafter: AutoCAD Inventor