

DAN SULLIVAN

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9308 S First St. | Austin, TX 78748

EDUCATION

Master of Science, Computer Science

Jan 2022 – May 2025

Georgia Institute of Technology – specialization in Computing Systems

Bachelor of Science, Mechanical Engineering

Dec 2017

The University of Texas at Austin – specialization in Control Systems

Secret Clearance

PROFESSIONAL EXPERIENCE

Software Engineer, C++ Developer – Ultra Intelligence & Communications

May 2023 -
Present

- Developed backend features for **real-time** military telecommunication system in **C/C++**
- Implemented new **application-layer protocol** (VMF) in C++ to expand message set that router could interpret
- Developed **Javascript**, **HTML**, **CSS**, and **C#** to give a front-end to operators to send new messages (VMF) to server for testing
- Developed **Python** automation tools could to parse files written in domain specific language and **generate C++** code
- Worked in a cleared facility – have a DOD Secret Clearance - utilized VIM, SVN and Git
- Trained new engineers on new technology and helped them learn modern development practices.

Flight Software Engineer – Terran Orbital

November
2022 – Mar
2023

- Developed **unit and integration tests** in **C++** (20) (googletest framework) for X-band radio software within a **Linux** environment.
- Developed Software test procedure for critical performance testing of space vehicle.
- Developed **bash shell scripts** and **Python** to assist Systems team with testing when necessary.

Software Engineer 2 – Edwards Lifesciences

SWE2:
March 2022
– October
2022

- Developed **Python** test scripts for **automated testing** testing of embedded devices
- Performed **Software Verification** testing and wrote **Software verification protocols**.
- Collaborated with Software Developer counterparts to edit **Software Design Documents**, **Software Requirements Documents**, and **Software Verification Protocols**.

Mechanical Engineer – Edwards Lifesciences

June 2018 –
March 2022

- Sole designer, developer, and maintainer for team **Python Library** for team workflow automation.

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SKILLS

C, C++, Java, Python, Git, SVN, VIM, Javascript, HTML, CSS, C#, Scheme, LabVIEW, MATLAB, Microsoft Office

PERSONAL PROJECTS

Design and Control of a Quadcopter

Fall 2020-
Present

(<https://danielpsullivan.me/projects/Design%20and%20Control%20of%20a%20Quadcopter/>)

- Wrote **Flight control software** in **C++** for custom, self-designed quadcopter.
- Developed **C++ drivers** for radio, IMU, and BLDC motors.
- Utilized 4 **PI controllers** for roll, pitch, yaw, and thrust control.
- Used **FreeRTOS** for real time sensing and control.
- Communicated with sensors and actuators via **SPI, I2C**.
- Expanded knowledge of **embedded systems programming** by writing code for a **STM32**, ARM microcontroller.

Inverted Pendulum

Summer 2019 -
Present

(<https://danielpsullivan.me/projects/Design%20and%20Control%20of%20an%20Inverted%20Pendulum/>)

- Developed **embedded C** code for a microcontroller real-time control system. The microcontroller would read rotary encoders, control motor PWM, and perform PID/LQR control calculations.
- Stabilized a “pendulum on a cart” system with a **PID controller** and a **LQR controller**
- Implemented **USART** transmit/receive code on embedded system (C code) and Laptop (**C# code**) to transmit real-time data.
- Wrote **Python** code for system simulation. Used Python simulation with acquired LabVIEW data to perform **System Identification** tasks and calculate unknown model parameters.
- Calculated LQR gains by using identified model parameters in conjunction with the **MATLAB control systems** toolbox for model development.

Personal Website

(<https://danielpsullivan.me>)

- Developed personal website using **Django framework**.
- Utilized **Docker** containers for easy deployment of multiple server instances.
- Used **Nginx** as a reverse proxy.
- Tracked and stored data within a **PostgreSQL** database.
- Managed all code changes with **GitHub**.
- Developed custom **HTML** and **CSS** files for website.

Summer 2019 -
Present

C++ Wave Simulator (https://github.com/daniel-p-sullivan/cpp_wave)

Fall 2016

- Translated a Java-based wave simulator into **C++** to increase simulator performance and learn **C++**.
- Furthered understanding of memory allocation and management, numerical methods (**Runge-Kutta** implementation), pointers, function pointers, header files, and structs.

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