# Sean Higley

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## Experience

### Software Engineer

Mekonos Inc.

May 2022 - Present (1 year 7 months)

Utilized skills in robotics, signal processing, software engineering, computer/machine vision, and desktop application development to engineer automated robotic systems used for cell microscopy, cell engineering, microfluidic, and bio-chemical applications.

▪ Leveraged .NET (C#), C++, C, Python, Qt, and WPF/Winforms to develop firmware, software, and graphical user interfaces

▪Prototyped and co-developed machine vision and automation systems with external partners and manufacturers

▪ Worked directly with chemists, MEMS engineers, biologists, and microfluidic scientists to produce useful applications that drive cell engineering experiments

▪Achieved 2 promotions within the first six months of hire

▪Interviewed, hired, and on-boarded software, mechanical, and electrical engineers to join our System Integration Team

▪ Experience working in BSL-2, wet-lab, and manufacturing/fabrication environments

### Software Engineering/Development Student

University of the Pacific

Jan 2017 - Dec 2022 (6 years)

SynthWav | Python & custom C dll's | Senior Project Sept 2022 - Dec 2022

▪ Developed a cross-platform application that models a Korg synthesizer, including the ability to hand draw custom waveforms.

▪ Implemented and designed live audio-manipulation algorithms to interpolate user-drawn waveforms creating piecewise-continuous signals that modulate and match pitch.

▪ Compatible with custom MIDI

Audio Plugins | C++ | ASPiK Will Pirkle Audio Tech Jan 2018 – Ongoing

▪ Developed reverb, modulation, octave, and multi-band compressor audio plug-ins in C++ to be used in various Digital Audio Workstations(Reaper, Logic ProX, Ableton). Deployable as .AU and VST3 packages to be used on Linux, Mac, and Windows machines

▪ Implemented industry standard live audio-manipulation algorithms to create 6 distinct reverb presets with variable controls, 10 stereo modulation presets with variable controls, stereo multi band compressor with live spectrogram, and bandpass filter for equalizing audio.
▪ Designed GUI using Adobe Photoshop, implemented with VSTGUI

Database Management Web-page & Relational Database | SQL, C# April 2021

▪ Designed and populated a relational database using SQL and Valentina Studio to model Trucking Company shipment management software
▪ Used Visual Studio to create web-page allowing a verified user to update, insert, and delete data from the database by filling curated forms and navigate queried results

Interpreter for Imperative PL | Python August 2021

▪ Designed and developed interpreter for small imperative programming language. Programmed in Python: language parser, scanner, and evaluator to interpret code instructions, draw abstract syntax trees, and evaluate code written in text files.

CPU Scheduling Simulator | C October 2021

▪ Implemented and analyzed the performance of 3 common CPU scheduling algorithms FCFS, RR, and SJF in a Linux environment simulating process creation. Process specifications were dictated by multiple standardized input files.

## Education

**University of the Pacific**
Bachelor of Science, Computer Science

## Skills

Python (Programming Language) • .NET Framework • C# • Machine Vision • C (Programming Language) • Microscopy • Image Processing • C++ • Firmware • Desktop Application Development

## Honors & Awards

**Dean's Honnor Roll** - University of the Pacific School of Engineering and Computer Science
Aug 2020