# Henry Luengas

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**Objective**

I am a recent graduate from Cal Poly with a degree in Computer Science, seeking both Software and Systems Engineering roles. I have experience in systems programming, graphics & rendering, computer networking, software development, and technical support for Linux, Windows, and MacOS.

**Education**

California Polytechnic State University San Luis Obispo **(Cal Poly) - College of Engineering:**
Bachelor of Science in **Computer Science**, graduation: June 2020

**Skills**

- **Languages:** C, C++, Python, Rust, Java, SAS, Racket
- **Systems & Frameworks:** Unix, Linux Kernel, OpenGL, Unity3D, KVM, Docker, SQL, Spark, Hadoop
- **Network Infrastructure:** Routing, Switching, Network Attached Storage, POE, Port Testing

**Work Experience**

**Cal Poly Student Affairs Technology** - Network Technician (April 2016 - June 2020)

- Diagnosed, and resolved issues with the campus housing network and servers.
- Provided broad technical support (software & hardware) for users of the campus network.
- Maintained an internal website used to provide support to students in housing.

**UHV Technologies** - Intern (May 2015 – Sep 2015)

- Assisted in the design process, digitizing and modeling engineering plans with CAD.
- Prototyped a linear encoder measurement device (hardware and software).

**Projects**

- **Ray Tracer:** Wrote a multithreaded, physically based renderer that parses and renders a subset of the *POV-Ray* scene description standard. The renderer applies rudimentary kinematics to produce successive frames for an output video.
- **Tie-Dye Pixel Art Renderer:** Wrote a Python program (also re-written in Rust) for rendering pixel art imagery inspired by classic tie-dye patterns. The program has many different operational modes and can run on a GPU using OpenCL.
- **Animation Blending in OpenGL:** Created an animation in C++ and OpenGL where a model skeleton goes through a series of dances with animation blending. The models and dance animations were extracted from the Unreal Engine game Fortnite.
- **Music Visualizer:** Wrote an audio visualization program in C++ and OpenGL where the user could fly around a procedurally generated landscape while the texture and height of the landscape react to audio captured from the system.
- **Networked Chat Client/Server:** Wrote a chat program in C that uses TCP to convey messages between multiple clients.
- **Network Packet Analyzer:** Wrote a C program that uses the *NPCAP* library to inspect packets functioning like a basic version of *Wireshark*.
- **AI Video Summarization Tool:** Worked with a group to create a utility that takes large amounts of security camera video and applies AI image recognition to pare down the footage into a short summary.
- **System Building & Home Networking:** Built a home virtualization server to use as a NAS, DNS resolver, security gateway, Docker host, batch renderer, and game server.