

HENRY LUENGAS

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EDUCATION

California Polytechnic State University – San Luis Obispo	College of Engineering Bachelor of Science in Computer Science	Sep 2015 – Jun 2020
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SKILLS

Programming Languages	Python, C, C++, JavaScript, Julia, Rust, Elm, Java
Systems and Frameworks	Linux/Unix, Vue.js, KVM, Docker, SQL, OpenGL, OpenCL, Unity3D
Network Infrastructure	Routing, Switching, VLANs, Network Attached Storage, POE, Cabling

EXPERIENCE

Network Engineer I – AT&T Technology Development Program – Dallas, TX	Jan 2021 – Present
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- Automated cleaning and reformatting process for physical and virtual network device setup data used by AT&T's internal cloud platform using Python and Excel
- Developed new front end features for the TDP internal website using Vue.js
- Created technical interviewing procedures for the Network Engineer hiring process
- Lead training sessions for TDP technical interviewers

IT Specialist – Cal Poly Student Affairs Technology – San Luis Obispo, CA	Apr 2016 – Jun 2020
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- Diagnosed and resolved issues with the campus housing network and servers
- Provided technical support (software & hardware) for users of the campus network
- Maintained an internal website used to provide support to students in housing
- Trained new technicians in the use of network systems and user support protocols

PROJECTS

Ray Traced Photorealistic Video Renderer

- Developed a multithreaded and object-oriented C++ image render that utilizes a spatial data-structure
- Features include a Cook-Torrance BDRF, reflection, refraction, shadowing, and Fresnel effects
- Planes, triangles, spheres, boxes, and multiple lights are all supported and can use matrix transformations
- The renderer applies rudimentary kinematics to produce successive frames for an output video

Tie-Dye Pixel Art Renderer

- Wrote a renderer in Python with the goal of investigating various methods of process acceleration
- Implemented JIT compilation using NumPy and Numba to show the drawbacks of the Python interpreter
- Implemented sequential and parallel running modes to investigate the performance of CPU parallelism
- Implemented a GPU compute mode with OpenCL to show how the process scales to hundreds of workers
- Implemented an R*Tree spatial data structure to display the speedup possible with an optimized algorithm

3D Marble Run Platformer Game

- Collaborated with a group to create a game from scratch in C++ and OpenGL
- Features include physics simulation, a spatial data structure, PBR shaders, shadow-mapping, environment mapping, view frustum culling, positional audio, enemy AI, and an adjustable third person camera

AI Video Summarization Tool

- Worked with a group to create a utility to pare down security camera footage using AI image recognition
- Developed in Python using YOLOv3 for object detection and OpenCV for image manipulation

Networked Chat App and Packet Analyzer

- Wrote client and server programs in C that use TCP to convey custom message packets between users
- Created a utility in C that uses NPCAP to inspect packets, functioning like a basic version of Wireshark

System Building & Networking

- Built a virtualization server to use as a NAS, DNS resolver, Sophos UTM security gateway, and Docker host

ADDITIONAL INFORMATION

Work Eligibility: Eligible to work in the United States and Canada with no restrictions