

## EXPERIENCE

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### Software Engineer > Filmtools > Burbank, CA 2022 - 2025

- Spearheaded development of a SaaS for on-demand vGPU cloud compute, virtualized by VFIO passthrough of workstation GPUs to QEMU/KVM; orchestrating VM provision via libvirt and routing requests via RESTful API over Node.js stack to optimally deliver rendering, ML, and CAD pipelines at the scale of hundreds of concurrent users.
- Implemented infrastructure for TURN-protocol optimized WebRTC live streaming and adaptive bitrate allocation, delivering hi-res browser-based remote post-production editorial services.
- Led a workflow optimization effort by delivering an automated vendor price-sheet parser driven by GenAI via GPT-4 API, expediting data processing to a Flask-based interface for review and scheduling for submission to the Netsuite database.

### Platform Engineer > Sidney Harman Academy > Los Angeles, CA 2021 - 2022

- Streamlined deployment of the Lab's VR/AR laboratories by establishing a GitHub Actions driven CI/CD pipeline and a multi-scene layered development workflow in the Unity engine.
- Extended content delivery and interactivity of USC's Scalar publishing platform via JavaScript API to meet the requirements of individual articles of authored scholarship.
- Held office hours to provide consultation for custom feature integration to researchers publishing with Scalar.

### C++ Developer > Pixerati > Chino Hills, CA 2021

- Developed a C++ Autodesk Maya SDK utility plugin to facilitate real-time procedural generation of mesh objects as a component to a proprietary compositing pipeline.
- Optimally serialized mesh vertices, UVs, and textures into USD for low-latency export and scene generation in Unreal Engine.

### Pipeline Support Specialist > Bento Box Entertainment > Burbank, CA 2019 - 2021

- Scaled and troubleshooted distributed rendering queues and server architecture of productions in parallel including: *Bob's Burgers* (Fox), *The Bob's Burgers Movie* (Disney), *Central Park* (Apple), and *The Prince* (HBO)
- Provided technical support and guidance for Toon Boom Harmony, Storyboard Pro, ShotGrid, and the Adobe Creative Suite.
- Expediently transitioned the enterprise network to a secure, VPN-based remote workflow in the advent of COVID-19.

## EDUCATION

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### Master of Science > Artificial Intelligence > University of Southern California 2021 - Hold

- Paused at 16/32 units - took leave to pursue work prospects.

### Bachelor of Science > Computer Science > California State University Northridge 2018

## PROJECTS

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### 3D Mesh GCN Classifier > Deep Learning + MLOps 2025

- Implemented pipeline to preprocess 3D models as graphs for classification by GCN trained on the ModelNet40 dataset.
- Deployed training and inference models as serverless IaC via Terraform on GCP, routed by FastAPI and tracked by MLFlow.

### Q-Learning Atari Breakout > Reinforcement Learning 2022

- Optimized a Markov Decision Process agent for training in TensorFlow to play and solve OpenAI Gym's Atari Breakout.
- Achieved game-winning reward values within 28 training episodes, logging iterations in Jupyter Notebook

## SKILLS

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**Programming** > C++, Python, JavaScript

**Machine Learning** > Pytorch, MLFlow, Open3D

**Graphics** > WebGL, OpenUSD, Maya, Unreal Engine

**Full Stack** > Node.js, Express.js, Socket.io, Flask, SQL, Redis

**DevOps** > GitHub Actions, Terraform, Nginx, AWS EC2, Lambda

**Virtualization** > QEMU, KVM, libvirt, Proxmox, Docker, Kubernetes