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EXPERIENCE

Software Engineer › **Filmtools Cloud** 2022 – 2024

- Spearheaded the scaling of numerous client-facing and in-house repositories to production, both independently and as primary engineer of a small team, leading every phase of the development lifecycle – ranging from conceptual research, architecture, full-stack development, UX & UI design, testing, deployment, and documentation. Key initiatives delivered:
  - › Cloud computation SaaS for high-performance GPU processing. End-user requests are delivered over JavaScript stack to the backend REST API to handle network-wide VM state management via bash and PowerShell. Prioritizes scalability, extensibility, security, and resource efficiency.
  - › SPA to facilitate remote hi-res post-production editorial. Packages the open-source framework *vdo.ninja*, ensuring stream consistency via dynamic bitrate management, a self-deployed TURN protocol, and video encoder optimizations. Dependencies installed via shell scripts for Mac OS and Windows.
  - › Proprietary app to intelligently process vendor price sheets, automating item updates to the organization's inventory database. Submissions to the Flask-based web interface are interpreted by OpenAI's GPT-4 API, allowing review of the results and scheduling to post to NetSuite via the front-facing application.

Staff Developer › **The Ahmanson Lab, USC Sidney Harman Academy** 2021 – 2022

- Led the engineering efforts of the 3D/VR experiences, *The Path Ahead* and *Bunker Hill VR*, coordinating with multidisciplinary teams of students and scholars for feedback to build the envisioned experience. Engineered and designed player control, physics, procedural terrain, volumetric particle effects, weather, NPC AI, and other core mechanics in the Unity Engine.
- Extended USC's Scalar publishing platform via JavaScript API to meet the requirements of individual articles of authored scholarship. Held office hours for researchers publishing with Scalar, providing guidance on platform-usage and implementing requested API features.

Maya SDK Engineer › *Contracted* at **Pixerati** 2021

- Developed a Maya C++ API plugin to capture and encode the polygonal and UV maps of 3D-meshes in a defined volume to binary. Implemented procedural re-rendering of the serialized meshes in Unreal Engine.

IT Specialist › **Bento Box Entertainment** 2019 – 2021

- Timely resolved technical support requests across the entirety of animation production pipelines, including:
  - › *Bob's Burgers* (Fox), *The Bob's Burgers Movie* (Disney), *Central Park* (Apple TV), and *The Prince* (HBO)
- Responsible for deploying software and admin updates to over 300 machines via bash and Active Directory.

EDUCATION

University of Southern California › *Master of Science* in **Artificial Intelligence** incomplete

- On-hold at 16/32 units . Took leave to pursue work prospects.
- Coursework: Analysis of Algorithms, Foundations of AI, Web Technologies, Machine Learning

California State University, Northridge › *Bachelor of Science* in **Computer Science** 2018

PROJECTS

5×5 *Go* Minimax Agent › *AI Game-Playing* 2022

- Implemented a heuristic-led Alpha-Beta pruning algorithm to win 5×5 *Go* versus other intelligent agents.
- Resulted in a 65% win-rate over other publicly available Alpha-Beta agents, and 42% versus Q-learning.

TensorFlow Q-Learning › *Reinforcement Learning* 2021

- Optimized an MDP agent for training under GPU to virtually play and solve OpenAI Gym's *Atari Breakout*.
- Achieved consistent game-winning reward values within 28 training episodes; logged using Jupyter.

MNIST Image Classifier › *Machine Learning* 2021

- Built a 4-layer neural network from scratch to solve the MNIST database image-classification problem.
- Achieved 99% accuracy of prediction under 80 epochs of training the model on a 10,000-image dataset.

SKILLS

Object-Oriented Programming (Python, JavaScript, C++) | Algorithms & Data Structures | Full-Stack Frameworks (Node.js, Express.js, Vue.js, Socket.io, Flask, MySQL, HTML/CSS) | Machine Learning (OpenCV, TensorFlow, MDP) | 3D & FX (Unity, WebGL, Maya) | Cloud (Docker, Nginx, OAuth, AWS - EC2, Lambda, Beanstalk) | Virtualization (libvirt, Proxmox, KVM)