

Andrew Erskine

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Experience

NeuroGEARS Ltd.

London, UK

SENIOR SOFTWARE ENGINEER

April 2022 - Present

Software / consulting company developing the Bonsai-Ex language and custom software tools for neuroscience research.

- Improved and extended the popular Bonsai-Rx language for visual reactive programming. Built and released Bonsai libraries for sensor interfaces (Tinkerforge), networking (ZeroMQ, Zyre, Lsl), streaming (FFmpeg) and Unity integration.
- Developed Unity VR environments in collaboration with clients in research and industry. With partners in clinical and sociological research, developed environments based on real-world city locations that participants can explore in VR while having key biophysical and attention signals monitored (heart-rate, galvanic skin response, eye-tracking, gaze fixation).
- Worked with NeuroGEARS team to provide bespoke software tools to clients including user interfaces and documentation. Used reactive extensions in .NET and asynchronous programming to produce Bonsai-Rx workflows controlling complex neuroscience experiments. Communicated engineering process and requirements to non-technical clients.

🔧 Bonsai · C# & .NET · Python · MATLAB · Unity · ZeroMQ · Avalonia · Windows Forms · MAUI

The University of Southern California

Los Angeles, California

POSTDOCTORAL SCHOLAR

May 2018 - April 2018

- Principle architect in moving Orion ground software from pen and paper to full test automation, empowering NASA requirement verification.
- Built a Python/LaTeX-based engine for creating NASA deliverables, cutting months of paperwork for engineers (per deliverable) to a day.
- Served as a subject matter expert for the flight software verification automation tiger team, sharing processes established while automating ground.
- Built a recursive-descent compiler for a templating language similar to Jinja2.
- Volunteer for Code Quest, Lockheed Martin's computer programming competition for high school teams.

🔧 Python packaging · Pytest · LaTeX · Sphinx · Linux · Vim · Perforce · JIRA · Jenkins · Agile · Test-driven development · Elastic stack

Air Sciences, Inc.

Golden, Colorado

NETWORK ADMINISTRATOR (INTERN & PART-TIME)

November 2011 - March 2014

- Purchased, set up, and maintained servers, laptops, and networks for a 50 person company.
- Introduced new processes such as a ticketing system, wiki, and KVM virtual machines - providing continuity and a knowledge base.
- Interviewed and trained three new administrators - utilizing the wiki to create reusable materials to accelerate the new hire process going forward.

🔧 Django · Git · Mediawiki · Network configuration · Linux administration · User support

CSM Alumni Association SOFTWARE DEVELOPER - WEBSITE, NEWSLETTER, GRAPHICS, AUDIO, VIDEO

August 2010 - April 2014

Education

Colorado School of Mines (CSM)

Golden, Colorado

B.S. IN ENGINEERING, MECHANICAL EMPHASIS – COMPUTER SCIENCE AND ECONOMICS MINORS

December 2013

- NASA Lunabotics Competition: built a full-size regolith collecting robot and competed with international teams at the Kennedy Space Center.
- FIRST Robotics Competitions: Mentored high school students in engineering principles. Refereed Colorado regional competitions (FRC and FLL).

🔧 SolidWorks (FEA) · C++ · Java · Python · Machine shop · Feedback controls · Git · Arduino · MATLAB · LabVIEW

Projects

SingToWho.site

June 2020

A COVID-19 inspired hack to keep people safe and engaged during the pandemic. When washing your hands, who should you sing happy birthday to?

🔧 HTML, Javascript, CSS · Google Cloud Storage · Cloudflare DNS · Skeleton CSS

Containerized Server

2015 - Present

Homelab for experimenting with containers, virtualization, and services - with archive-class robust file-integrity protections.

🔧 Docker (RancherOS) · ZFS · Traefik · RAID · btrfs · Samba · Mumble · Plex · Borg backup · Beets · NGINX