

Erik Luu

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Education

California Polytechnic State University, San Luis Obispo

M.S. Computer Science, June 2024 (expected) GPA 3.8

B.S. Computer Science, June 2023

Experience

Cylerian LLC // Software Engineering Intern (Full Stack)

Summer 2022

- Architected and implemented a data processing and analytical pipeline for Cylerian's security-focused platform.
- Analyzed clients' Google Cloud projects' user and logging activity for general activity and anomaly detection with interactive dashboards, reports, and graphs by integrating relevant GCP APIs and services.
- Authored detailed documentation for unfamiliar codebases with minimal prior documentation.

Technologies: NodeJS, Google Cloud Platform, AWS, Terraform, Docker

Noyce School of Applied Computing // Machine Learning Engineer (Computer Vision)

Spring 2022

- Created a pipeline to develop a Convolutional NN in PyTorch to assess wildfire damage from aerial imagery.
- Applied image transforms to augment training data with rotations, zooms, and horizontal flips.
- Implemented a Bayesian optimization search technique to evaluate rates, batch sizes, and layer widths.

Technologies: PyTorch, SciKit, QGIS, Bash Scripts

Noyce School of Applied Computing // SWE, Data Engineer, Team Manager

Fall 2021 - Winter 2022

- Headed a team to structure and index national and California state search and rescue forms.
- Built a platform using NodeJS to organize records and enable keyword searches.

Technologies: Pandas, NodeJS, MongoDB

Projects

LociNet // Graduate Thesis (Machine Learning + Software Engineering)

Summer 2023 - Present

- Developing a [dynamic knowledge graph system](#) to enhance user and machine recall and content exploration.
- Utilizing ML techniques, including semantic latent space models, dimensionality reduction, embeddings and geometric graph theory to analyze relationships between user-generated media chunks and external databases to provide content and structural recommendations. Prior work: [LociMaps](#).

AccessibleMaps // Undergraduate Thesis (Software Engineering)

Winter - Spring 2023

- Built a [web-based application](#) in React and NodeJS to perform route calculations based on sidewalk grade.
- Integrated sidewalk grade analysis to ensure ADA-compliant accessible routes for a range of capabilities.

Lightweight Threading System // Undergraduate Project (Software Engineering)

Fall 2022

- Developed a custom lightweight threading library enabling concurrent execution of C programs.
- Implemented context switching, customizable scheduling, and an API for spawning, blocking, and terminating threads. Technical details include saving/restoring thread contexts and appropriate pointers.

Quantifying Happiness // Undergraduate Research (Data Science)

Winter 2021

- [Conducted an analysis](#) of global happiness and its determinants based on *The World Happiness Report*.
- Employed statistical techniques including a variety of statistical tools and regressions to build a predictive model using factors such as population, social infrastructure, and GDP—achieving an R-squared (R²) value of 0.7.

Awards & Other Experience

Coursework: Systems Programming; Computer Vision; NLP; Foundations of ML; Distributed Systems; Databases

Central Coast Data Science Fellowship: Fall 2022 - Spring 2023

- Implemented an LDA clustering method wrapper for R package 'tidymodels'. Led tutoring sessions for intro students.

NCAA D1 Cross Country and Track Athlete: 2019 - Present