

# James Liam Rounthwaite

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## Education

**California Polytechnic State University, San Luis Obispo**

Sept. 2020 – 2024 exp.

*Bachelor of Science in Computer Science, Economics Minor*

**GPA: 3.55**

Relevant Coursework: Software Eng., Systems Programming, Natural Language Processing, Data Science, Algorithms

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## Computer Science Work Experience

**Applied AI Digital Democracy Lab Researcher** | Cal Matters & Cal Poly University

Summer 2023

- Planned, implemented, & shipped tool to aid journalist in finding newsworthy state bill discussions
- Developed pipeline using LSTM to classify 4000+ remarkable legislative hearings across 6 years of data
- Implemented data collection, cleaning, classification, & data analysis as a fluid architecture into single project
- Presented comprehensive data analysis showcasing effectiveness and submitted research paper on findings

**Compiler Software Intern (Diab)** | WindRiver

Summer 2022

- Worked on WindRiver's state of the art diab compiler, at multiple stages from parser to the IR to the optimizer
- Integrated new compiler pipeline with WindRiver's compiler to work with C++11 standards using C & C++
- Succinctly presented finished EDG compiler integration to team, experts, and laymen
- Finished 36+ story points in AGILE setting - biweekly sprints, daily scrums, creating, developing, & reviewing

**Coding Camp Instructor** | iD Tech

Summer 2021

- Taught ages 9-18 Python, Lua & Keras for *Python*, *Basics of Neural Networks*, & *Roblox Studio Game Design*

**Software Developer Intern** | 6crickets

Summer 2020

- Built over 30 custom programs to scrape the web in Python using *BeautifulSoup* and *Selenium*
  - Collaborated in creating a library of 15 functions for web crawling to optimize efficiency
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## Computer Science Projects

**Reinforcement Learning Modelling Social Network, Research Paper**

Apr. 2022 – Apr. 2023

- Used Q-learning reinforcement learning to model behavior of primates to generate a proximity network
- Presented 12-page paper to CompleNet conference showing model tuning, graph comparison, and results
- Documented repeated emergent highly central agents despite all agents starting with same parameters

**Idiom Identifier, Natural Language Processing**

Mar. 2022

- Created algorithms to identify various idioms and idiom variation from labelled idiomatic paragraphs
- Used word vector similarity to predict and identify a new idiom not seen before

**Developed Interpreted Programming Language**

Mar. – Jun. 2022

- Built parser, interpreter, type-checker, mutation, syntactic desugaring features (50+ hour project)
- Integrated LISP-like functional programming language in a team of 3
- Implemented divergent languages to support mutation through store-passing style and a robust type system

**"WikiPath" Network of Wikipedia Internal Links, SLOHacks Hackathon**

Jan. 2022

- Parsed Wikipedia's internal links into a graph to solve shortest path between articles, equipped with simple UI
- Used big data techniques to manage 50+ gigabytes of information

**Volunteer Management System WebApp**

Jan. – Jun. 2022

- Full stack developer with Hack4Impact building modular web app to track volunteers, events, messaging
  - Expanded broad use, self-sufficient node package, readily deployed for non-profits with customization options
  - Participated in weekly scrum meetings using Agile sprint framework under my tech lead
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## Languages and Skills

- Python, C, C++, C#, R, Java, LISP, JavaScript, RISC-V Assembly, ARMv8, React.js, HTML/CSS
  - Unix/Linux, GCC, GDB, Pandas, SQL, MERN Stack, Node, SKLearn, Keras, NLTK, SpaCy, BeautifulSoup, Selenium
  - Algorithms, Data Structures, Compilers, AI/ML, Graph Theory, Discrete Math, Data Science, Teaching
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## Clubs and Hobbies

- **Full Stack Dev (Hack4Impact, 2020-2022):** Club formed teams to build MERN stack apps for nonprofits
- **Gamemaster (Dungeons & Dragons, 2017-Cur.):** Created challenges for friends with storytelling and improv