# Lance Mathias

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## Education

University of California, Berkeley — August 2021 - May 2025
*Bachelor of Arts in Computer Science* — GPA: 4.0

Courses: Structure and Interpretation of Computer Programs, Data Structures and Algorithms, Discrete Math and Probability Theory, Optimization Models in Engineering, Efficient Algorithms and Intractable Problems, Designing Information Systems II, Linux SysAdmin Decal

## Technical Skills

C, C++, Python, OpenCV, Java, Junit, Javascript, HTML/CSS, C#, Microsoft .NET, SQL, MongoDB, Git, Agile, Docker, Figma, SwiftUI, OpenCV, TensorFlow

## Selected Projects

@Heart — Spring 2022
- Heart-monitoring application made for the iHackHealth appathon sponsored by UCSF and Apple
- iOS app made using SwiftUI, Apple HealthKit, and Apple WatchKit to detect cardiac arrhythmias using Apple Watch data and alert clinicians

Automatic Schedule Planner — Winter 2021
- Node.JS app which automatically integrates todo list with current schedule
- Uses Notion and Google REST APIs to read and write data, deployed using Heroku and GitHub
- Uses private key authentication and Google OAuth2 to ensure user privacy

Berkeley Formula SAE - Automatic Suspension Generator — Fall 2021
- Solidworks plugin that automatically generates 3D suspension models from 3rd party app data
- Use Microsoft C# .NET framework and Solidworks API to read configuration files and translate data into Solidworks 3D sketches
- Allowed our team of 70+ members to automatically generate suspension design, saving hours per iteration and ensuring 100% accuracy.

Scheme Interpreter — Fall 2021
- Implemented a full-featured Scheme interpreter using Python
- Built parser, lexer, and interpreter with lexical and dynamic scope, and tail-call optimization

## Highlighted Experience

NLP Researcher - Berkeley Data Science Discovery — January 2022-Present
- Working under Professor Cyrus Dioun to build and test NLP models on air traffic control (ATC) data
- Apply NLP count vectorization and cosine similarity using Doc2Vec models
- Validate past models on testing data and documenting results and code for future users

Sysadmin Decal Committee Head - Open Computing Facility — December 2021-Present
- Recruit facilitators and develop content for the UC Berkeley Linux Sysadmin course covering networking, databases, remote deployment, and container management.
- Provision and maintain Linux virtual machines for each student and develop course website

Research Associate - NASA Ames Research Center — October 2020-August 2021
- Worked in a team to automate aircraft model generation for NASA's LAVA fluid dynamics solver
- Developed parallelizable libraries in C++ to create solver-compatible files from 3D models