





# Luca Manolache

 luca.manolache@berkeley.edu  (408) 204-0841  blog  lucamanolache

## Education

### University of California, Berkeley

Berkeley, CA

EECS B.S. 4.00 GPA

2023–2027

**Coursework:** CS 61A (A+), CS 61C (A+), CS 194/294 - Responsible GenAI and Decentralized Intelligence (A), EECS 16A (A)

**Current Coursework:** CS 70, EECS 16B, CS 161, CS 164, CS 188

**Activities:** Machine Learning at Berkeley

## Experience

### Machine Learning at Berkeley

Berkeley, CA

Education Officer

Jan 2023–Present

- Revamped paper quizzes for both better quality and more modern papers for new memeber education program
- Revamped midterm to better capture new memeber's experiences

Member

Aug 2023–Jan 2023

- Created strategy for multiplayer statistics games using tabular Q-learning.
- Worked with team on detecting ChatGPT (and other AI) generated content. Ended with 92% accuracy, gaining a silver medal on Kaggle (34/4484) submissions

### Palo Alto Robotics Team

Palo Alto, CA

Software Lead

Oct 2019 - Jun 2023

- Lead the software team (12 developers strong) using OpenCV and Java using github, CI/CD resulting in victory at regional competition and software awards.
- Taught members Java programming and how to implement PID controllers, fine-tune algorithms, and test the robot.

### Auditoria.ai

Santa Clara, CA

Summer Intern

Jun 2022 - Aug 2022

- Created system to identify structured elements (such as tables) in financial documents using DNNs using PyTorch and OpenCV.

### NASA Ames

Santa Clara, CA

Summer Intern

Jun 2021 - Aug 2021

- Worked on SafeDNN project exploring new techniques and tools to ensure that systems that use Deep Neural Networks (DNN) are safe, robust and interpretable resulting in a published paper

## Projects

### Wordle Solver

2023

- Solved using the algorithm presented in 3B1B for maximizing information with each guess. Written in Rust using Rayon for parallelism. Averages solutions in 3.5 guesses.

### Inverse kinematic robotic arm

2023

- Created a robotic arm to pick up blue berries using OpenCV. Implemented inverse kinematics using Arduino C.

### Lab Attendance System

2022

- Created full stack attendance system for tracking robotics team member's lab participation with MongoDB database and async Rust backend. Secured website against members attempts to find password/bypass system

### SightWalk

2021

- Led team of 30 members on SightWalk project - "Outdoor blind navigation", achieving runner up at the International 2021 FIRST Innovation Challenge. Used OpenCV and CNNs to implement a sidewalk navigation device for visually impaired individuals.


## Publications

### An Overview of Structural Coverage Metrics for Testing Neural Networks

Aug 2022

## Skills

 **Expert:** Python, Rust, Java, C, x86, RISC-V, Data Analysis/Visualization, Pandas, Numpy, Pytorch, Git/Terminal

 **Proficient:** React, Typescript, MongoDB, SQL, Compilers

## Awards

USACO Competition - Gold level, FRC - Utah Regional Winner