LUCA MANOLACHE

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EDUCATION

University of California, Berkeley *2026*
Classes CS 61A, CS 61C, CS 194 - Responsible GenAI and Decentralized Intelligence

EXPERIENCE

Machine Learning at Berkeley August 2023 - Present
Member *Berkeley*

- Worked on RL project using Q-learning for playing multiplayer statistics games.

Palo Alto High School Robotics Team October 2019 - June 2023
Software Lead *Palo Alto High School*

- Coordinating the software team (12 developers) to use OpenCV and Java using github, CI/CD. Taught members how to implement PID controllers, fine-tune algorithms, and test the robot.

Auditoria.ai / Intern June 2022 - August 2022
Intern *Santa Clara, CA*

- Worked at local startup Auditoria, which automates finance processes, focusing on identifying structured elements (such as tables) in financial documents using DNNs in PyTorch and OpenCV

NASA Ames Research Center/ Intern June 2021 - August 2021
Intern *NASA, Ames*

- Worked on SafeDNN project exploring new techniques and tools to ensure that systems that use Deep Neural Networks (DNN) are safe, robust and interpretable.
- Applied the new techniques to the analysis of deep neural networks, publishing https://arxiv.org/abs/2208.03407.

PROJECTS

Wordle solver using entropy 2023
github.com/lucamanolache/wordle
Solved using the algorithm presented in 3b1b for maximizing information with each guess. Written in Rust using Rayon for parallelism.

Inverse kinematic robotic arm 2023
github.com/lucamanolache/inverse-kinematics
Created a robotic arm to pick up blue berries using OpenCV. Implemented inverse kinematics using Arduino C.

Attendance System 2022
github.com/lucamanolache/attendance
Created full stack attendance system for tracking robotics team member's participation with MongoDB database and async Rust backend.

SightWalk 2021
github.com/team8/outdoor-blind-navigation
Worked on SightWalk project - "Outdoor blind navigation", runner up at the International 2021 FIRST Innovation Challenge. Uses OpenCV and ML to implement a sidewalk navigation device for blind using CNNs.

PAPERS

An Overview of Structural Coverage Metrics for Testing Neural Networks August 2022
Usman, M., Sun, Y., Gopinath, D., Dange, R., Manolache, L., Pasareanu, C.S. (2022). An Overview of Structural Coverage Metrics for Testing Neural Networks. ArXiv, abs/2208.03407.

TECHNICAL STRENGTHS

Languages	Java, Python, C++, Rust, Javascript	**Tools**	Git, Vim, Tensorboard
Libraries	PyTorch, OpenCV, Flask, Numpy, React	**Awards**	USACO Gold, FRC Utah Winner