

Ceferino Patino

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OBJECTIVE

Aspiring computer scientist eager to continue learning and develop practical skills through meaningful industry experience. Seeking opportunities to apply my software development knowledge while contributing to innovative projects.

EDUCATION

B.S. Computer Science Lincoln, NE, United States
University of Nebraska – Lincoln
May 2024 – May 2026
Courses: Introduction to Discrete Structures, Computer Science II, Statistics and Applications, Data Structures and Algorithms, Psychology of Music, Accounting for Business Decisions, Computer Systems Engineering, Programming Language Concepts, Software Engineering, Introduction to Machine Learning, Economics Essentials and Issues, Linear Algebra, Business Law and Administration, Finance of Business Decisions, Design and Analysis of Algorithms

Transfer St. Louis, MO, United States
St. Louis Community College
May 2024 – May 2026
Courses: Engineering Physics I, Engineering Physics II, General Chemistry I, General Chemistry II, Analytic Geometry and Calculus II, Introduction to Java I, Public Speaking, Introduction to Psychology

High School Diploma St. Louis, MO, United States
Collegiate School of Medicine and Bioscience
August 2020 – May 2024
Courses: AP Computer Science Principles, AP Calculus, AP Computer Science A, AP Psychology, AP Biology, AP Calculus, AP English Language and Composition, AP English Literature and Composition

HONORS AND AWARDS

Undergraduate Student Researcher Award University of Nebraska – Lincoln
2025
Dean’s List University of Nebraska – Lincoln
Fall 2024 - Spring 2025

SKILLS

Languages: Python, C++, Rust, JavaScript, Lua, Bash, SQL, Nix, Go, Java
Frameworks & Libraries: PyTorch, OpenCV, Astro, React, Express.js
Tools & Platforms: Docker, Git, Nix/NixOS, Maturin, MPI, HDF5, AWS, Django
Concepts: Machine Learning, RL/MARL
Software Engineering: SOLID, Agile, SCRUM, CI/CD, DevOps, Parallel Programming
Soft Skills: Team collaboration, Technical communication, Self-directed learning, Mentorship

CERTIFICATIONS

AWS Certified Cloud Practitioner Amazon Web Services
October 2023 – May 2026

EXPERIENCE

OASYS Lab – University of Nebraska – Lincoln Lincoln, NE, United States
Undergraduate Researcher
May 2024 – Present

- Co-led MOASEI competition at AAMAS 2025 with 10+ teams, benchmarking MARL agents in open-agent/task settings

Raman Lab – Washington University Remote
Software Developer
June 2024 – Present
Danforth Plant Science Center St. Louis, MO, United States
Software Developer
December 2023 – May 2024
Midwest Pool Management & Maryland Heights Parks and Recreation St. Louis, MO, United States
Lifeguard
July 2021 – August 2022

- Monitored swimmer safety and maintained pool facilities across two locations

PROJECTS

cpatino.com

Web Development – JavaScript, Astro

Personal

May 2025 – Present

- Built and deployed a personal site with Astro, optimized for minimal bundle size and fast loads

yumevim – “dream vim”

Dev Tooling – Lua, Nix, Neovim

Personal

July 2024 – Present

- Architected a modular, declarative Neovim configuration with Lua and Nix for reproducible setups across devices
- Implemented zero-downtime updates with atomic rollbacks using Nix flakes and Git

3D Volumetric 2-Photon Lightsheet Microscope

Biotechnology / Microscopy – C++, MPI, HDF5, OpenCV

Raman Lab – Washington University

June 2024 – Present

- Developed software for a cutting-edge 3D volumetric 2-photon lightsheet microscope—one of few worldwide
- Built parallel data acquisition pipelines with MPI and HDF5 handling 20 GB/s of image data
- Optimized imaging workflows with OpenCV for real-time processing of volumetric datasets

free-range-zoo

AI / Reinforcement Learning – Python, PyTorch

OASYS Lab – University of Nebraska – Lincoln

April 2024 – Present

- Developed open-environment benchmarks for POSG-based multi-agent RL (wildfire, cybersecurity, rideshare)
- Implemented vectorized training loops for MADDPG, COMA, and GNN-based RL policies
- Enabled dynamic agent/task/frame changes to benchmark adaptability in open systems
- Used by 20+ researchers internationally as a benchmark RL algorithms in multi-agent environments

free-range-rust

AI / Reinforcement Learning – Rust, CUDA, Maturin

OASYS Lab – University of Nebraska – Lincoln

April 2024 – Present

- Implemented custom CUDA kernels in Rust to accelerate dynamic RL environments
- Doubled performance of **free-range-zoo** through low-level vectorized space operations
- Exposed Rust/CUDA modules to Python via Maturin for seamless integration and use by other research groups

yumeami – “dream network”

DevOps – Nix, NixOS

Personal

April 2024 – Present

- Engineered modular NixOS configurations with separate system and home profiles across heterogeneous hardware
- Developed a self-hosted infrastructure integrating services, CI/CD pipelines, and custom tooling for automation
- Implemented declarative provisioning and deployment workflows enabling reproducible, scalable environments

Fonio Seed Computer Vision

Computer Vision – Roboflow, OpenCV

Donald Danforth Plant Science Center

April 2024 – August 2024

- Compiled and labeled a dataset of over 8,000 fonio seed images for robust model training
- Implemented a neural network achieving 99% accuracy in detecting overlapping seeds and providing precise counts

Rhizoroot.ai

Computer Vision / Agricultural AI – PyTorch, OpenCV, Django, Docker

Donald Danforth Plant Science Center

December 2023 – August 2024

- Developed a Django interface to run segmentation and extrapolate root volume
- Built root segmentation models using PyTorch for high-resolution root image data
- Processed segmentation masks with OpenCV to compute volumetric estimates achieving 97% accuracy

FieldDock

Computer Vision / Agricultural AI – OpenCV, Docker, AWS

Donald Danforth Plant Science Center

December 2023 – May 2024

- Deployed multiple components of a high-throughput drone data collection system using Docker and AWS
- Developed flight software for drone vision and landing leveraging OpenCV

qOverflow

Web Development – JavaScript, MongoDB, React, Express.js, Node.js

Black Data Processing Associates (BDPA)

June 2022 – August 2022

- Won first place in 2022 BDPA hackathon developing a Stack Overflow-inspired Q&A platform with custom analytics
- Containerized the app using Docker and deployed on Kubernetes; documented APIs with SwaggerHub

hypixel-helper

Web Development – JavaScript, React, Redis

Personal

April 2022 – May 2022

- Built live tracking and forecasting of Hypixel Skyblock marketplace data using SARIMA

OPEN SOURCE CONTRIBUTIONS

nixpkgs

Contributor & Package Maintainer

NixOS Project

May 2025 – Present

- Maintain the TeamViewer package, managing updates, patches, and compatibility fixes
- Contribute to nixpkgs with improvements, reviews, and new package additions
- Collaborate with the community to ensure package quality and build reproducibility

PUBLICATIONS

Inaugural MOASEI Competition at AAMAS’2025: A Technical Report

Patino C., Billings T., Abadi A., Redder D., Eck A., Doshi P., Soh L.-K.

arXiv:2507.05469

2025

VOLUNTEER

St. Louis Foodbank

St. Louis, MO, United States

EXTRACURRICULARS

FTC Robotics – Team 9027

Programmer

St. Louis, MO, United States

August 2022 – May 2024

HOSA Future Health Professionals

Treasurer

St. Louis, MO, United States

August 2023 – May 2024

CyberUp Cybersecurity League

Competitor

Remote

August 2021 – May 2023

- 2nd (2023) and 3rd (2022) place in national CTF competitions

World Wide Technology Hackathon

Programmer

St. Louis, MO, United States

2023, 2022, 2021

- 2nd place (2022) — ClearGrade: anonymized grading system
- 1st place (2021) — Recess: MS Teams plugin for virtual connections

Student Council – Collegiate School of Medicine and Bioscience

Technology Lead

St. Louis, MO, United States

August 2022 – September 2023

FAST Swim Team

Swimmer

St. Louis, MO, United States

August 2014 – May 2023

National Federation of Music Clubs

Piano Soloist

St. Louis, MO, United States

August 2014 – May 2024