



Ceferino Patino

Software Engineer

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👤 Profile

Seasoned software engineer. I've navigated various domains, from web development to machine learning and computer vision. Whether participating in hackathons, exploring innovative solutions, or contributing to community-driven initiatives, I thrive on embracing new challenges. My enthusiasm extends beyond code, and I'm excited to connect, collaborate, and explore opportunities.

💻 Skills

Computer Vision, Data Aggregation, Data Manipulation, Reinforcement Learning, Machine Learning

🎓 Certifications

AWS Certified Cloud Practitioner: 5MVC6LM18FE11L33, Amazon Web Services

October 2023 — May 2026

📁 Relevant Experience

Research Assistant at Open Agent Systems (OASYS) at University of Nebraska – Lincoln, Lincoln

May 2024 — Present

- Implemented novel algorithms for training RL agents to cooperate in an organizational neural network simulation domain
- Built education modules to teach open agent system-based RL to PhD level students and new lab members

Software Developer at the Raman Lab at Washington University, St. Louis

June 2024 — Present

- Developing computer vision algorithms for tracking neuron activity to model olfactory functions
- Created HPC processes for handling high-throughput data from microscopic interfaces

Software Engineering Intern at Donald Danforth Plant Science Center, St. Louis

November 2023 — June 2024

- Led the development of a project involving PyTorch, Django, and OpenCV for root segmentation and volume extrapolation, creating a neural network model and user-friendly interface served using Django
- Contributed to efforts in the FieldDock project, utilizing OpenDroneMap (ODM) for automated drone flight planning and management. Implemented a Django API for wireless data export and OpenCV for efficient image processing

🎓 Education

B.S. in Computer Science, University of Nebraska - Lincoln, Lincoln

May 2024 — May 2026 (expected)

- Coursework: Introduction to Discrete Structures, Computer Science II, Statistics and Applications, Data Structures and Algorithms, Psychology of Music, Accounting for Business Decisions, Computer Systems Engineering

Saint Louis Community College, Saint Louis

August 2023 — May 2024

- Coursework: 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

Collegiate School of Medicine and Bioscience, Saint Louis

August 2020 — May 2024

- Coursework: 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

💻 Projects

Fonio Seed Computer Vision, Donald Danforth Plant Science Center

April 2024 — Present

- Compiled and labeled multiple advanced datasets of fonio seeds to prepare for model training
- Implemented a neural network model to detect multiple overlapping instances of fonio seeds in an image and generate an accurate count

Rhizoroot.ai, Donald Danforth Plant Science Center

December 2023 — April 2024

- Implemented PyTorch for advanced root segmentation, enhancing precision in root analysis
- Developed a user-friendly interface using Django, streamlining the process of root volume extrapolation
- Applied OpenCV to generated mask to generate accurate root volume estimations

FieldDock, Donald Danforth Plant Science Center

December 2023 — Present

- Containerized and hosted several components of a high-throughput drone data collection system using Docker and AWS

HypixelHelper, Personal

January 2022 — Present

- Compilation of essential trackers to analyze price trends of items and from Hypixel Skyblock API
- Integrated with the Hypixel API to retrieve auction house data, preprocessed, and cached to Redis
- Application and API hosted using Apache on a Raspberry PI

House Wars Management Portal, Collegiate School of Medicine and Bioscience

May 2022 — September 2023

- Django web application made for streamlining the management of local school event
- Managed sign ups with logic implementation to balance team distribution in events, as well as aggregating points between teams and automatically displaying in a custom management dashboard.
- Used by over four hundred members of administration and students for signing ups and event management

qOverflow, Black Data Processing Associates

July 2022 — August 2022

- 2022 – first place
- Implementation of features from Stack Overflow with custom analytics
- Uses MongoDB, Express, React, and NodeJS. The app containerized using Docker on a Kubernetes cluster, API documentation written using SwaggerHub

KnowItAll, World Wide Technology Hackathon

January 2022 — March 2022

- Application to allow team leaders and teachers to see the nicknames, pronouns, and name pronunciation audio files of all the members of their organization in a centralized dashboard
- Uses MySQL, ExpressJS, React, and NodeJS. The app containerized using Docker and hosted on Kubernetes clusters

🏠 Extracurriculars

Competitor at CyberUp CyberSecurity League, St. Louis

August 2021 — May 2023

- 2023 - second place; 2022 - third place
- Competed in capture the flag competitions using Wireshark, nmap, Metasploit, and linux terminals
- Successfully performed on a national level, making quick decisions and prioritizing tasks to optimize the team's chances of earning points and achieving high rankings

Lead Programmer at World Wide Technology Hackathon, St. Louis

June 2020 — May 2023

- 2022 - second place - Developed prototype for ClearGrade, a system for anonymizing the grading process
- 2021 - first place - Designed the business plan and prototype for Recess, a Microsoft Teams plugin to enhance virtual connections between people
- Designed database models for SQL databases and created frameworks for API backend implementation.

FTC Robotics, FTC Team 9027

August 2022 — Present

- Worked on field, facility, and network setup for FTC robotics tournaments across the entire St. Louis area
- Aided teams in making sure that their bot was functional and competition ready before events

STUCO Technology Lead, CSMB

August 2022 — September 2023

- Managed the setup and operation of sound systems, microphones, projectors, and other AV equipment
- Demonstrated strong leadership and communication capability by managing technological aspects of student activities and events

Volunteer, St. Louis Foodbank

May 2022 — August 2022

- Dedicated 5 hour per week to helping feed the hungry
- Helped in inspecting and categorizing food donations, adhering to quality and safety standards to guarantee that only safe and suitable items distributed

🍏 Volunteer Work

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🗑 Other Experience

Lifeguard, Midwest Pool Management

August 2021 — August 2022

Lifeguard, Maryland Heights Parks and Recreation

July 2021 — August 2021

- Maintained filtration systems and other aquatic systems within facility
- Attentively watched swimmer to identify distress

Treasurer, HOSA Future Health Professionals

August 2023 — Present

- Managed financial operations of the CSMB HOSA chapter
- Collected and managed member dues, ensuring accurate record-keeping and prompt payment processing

Concert Pianist, National Federation of Music Clubs

August 2014 — Present

- Consistently awarded superior ratings in NFMC piano competitions
- Actively contributed to the local music community by performing at charity events, fundraisers, and community gatherings

Backstroke and Long-Distance Swimmer, FAST Swim Team

August 2014 — Present

- Balanced academic commitments with rigorous swim training, highlighting effective time management
- Represented the FAST swim team in local and regional swim events