

Ceferino Patino

Portfolio: cpatino.com
GitHub: github.com/c4patino

Email: c4patino@gmail.com
Mobile: +1 (314) 537-9818
LinkedIn: linkedin.com/in/c4-patino

EDUCATION

University of Nebraska – Lincoln <i>B.S. in Computer Science</i> <i>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</i>	Lincoln, NE, United States May 2024 – May 2026
St. Louis Community College <i>Transfer</i> <i>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</i>	St. Louis, MO, United States August 2023 – May 2024
Collegiate School of Medicine and Bioscience <i>High School Diploma</i> <i>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</i>	St. Louis, MO, United States August 2020 – May 2024

SKILLS

Languages: Python, C++, Rust, JavaScript, Lua, Bash, SQL, Nix, Go
Frameworks & Libraries: PyTorch, OpenCV, Astro, React, Express.js
Tools: Docker, Git, Nix/NixOS, Maturin, MPI, HDF5, AWS, Django
Concepts: Machine Learning, Artificial Intelligence, RL/MARL, Parallel Programming, DevOps, CI/CD, SCRUM, SOLID

EXPERIENCE

OASYS Lab – University of Nebraska – Lincoln <i>Undergraduate Researcher</i> <ul style="list-style-type: none">Co-led MOASEI competition at AAMAS 2025 with 10+ teams, benchmarking MARL agents in open-agent/task settings	Lincoln, NE, United States May 2024 – Present
Raman Lab – Washington University <i>Software Developer</i>	Remote June 2024 – Present
Danforth Plant Science Center <i>Software Developer</i>	St. Louis, MO, United States December 2023 – May 2024
Midwest Pool Management & Maryland Heights Parks and Recreation <i>Lifeguard</i> <ul style="list-style-type: none">Monitored swimmer safety and maintained pool facilities across two locations	St. Louis, MO, United States July 2021 – August 2022
NVIDIA <i>Software Engineering Intern</i> <ul style="list-style-type: none">Completed a learning-oriented internship focused on high-performance computing and parallel programmingGained hands-on exposure to C++, CUDA, and large-scale software development practicesObserved internal workflows and collaborated on minor tooling tasks within NDA constraints	Remote August 2019 – May 2020

CERTIFICATIONS

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

cpatino.com <i>Web Development – JavaScript, Astro</i> <ul style="list-style-type: none">Built and deployed a personal site with Astro, optimized for minimal bundle size and fast loads	Personal May 2025 – Present
yumevim – "dream vim" <i>Dev Tooling – Lua, Nix, Neovim</i> <ul style="list-style-type: none">Architected a modular, declarative Neovim configuration with Lua and Nix for reproducible setups across devicesImplemented zero-downtime updates with atomic rollbacks using Nix flakes and Git	Personal July 2024 – Present
3D Volumetric 2-Photon Lightsheet Microscope <i>Biotechnology / Microscopy – C++, MPI, HDF5, OpenCV</i> <ul style="list-style-type: none">Developed software for a cutting-edge 3D volumetric 2-photon lightsheet microscope—one of few worldwideBuilt parallel data acquisition pipelines with MPI and HDF5 handling 20 GB/s of image dataOptimized imaging workflows with OpenCV for real-time processing of volumetric datasets	Raman Lab – Washington University June 2024 – Present

free-range-zoo	OASYS Lab – University of Nebraska – Lincoln
<i>AI / Reinforcement Learning – Python, PyTorch</i>	<i>April 2024 – Present</i>
<ul style="list-style-type: none"> 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	OASYS Lab – University of Nebraska – Lincoln
<i>AI / Reinforcement Learning – Rust, CUDA, Maturin</i>	<i>April 2024 – Present</i>
<ul style="list-style-type: none"> 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”	Personal
<i>DevOps – Nix, NixOS</i>	<i>April 2024 – Present</i>
<ul style="list-style-type: none"> 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	Donald Danforth Plant Science Center
<i>Computer Vision – Roboflow, OpenCV</i>	<i>April 2024 – August 2024</i>
<ul style="list-style-type: none"> 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	Donald Danforth Plant Science Center
<i>Computer Vision / Agricultural AI – PyTorch, OpenCV, Django, Docker</i>	<i>December 2023 – August 2024</i>
<ul style="list-style-type: none"> Built root segmentation models using PyTorch for high-resolution root image data Developed a Django interface to run segmentation and extrapolate root volume Processed segmentation masks with OpenCV to compute volumetric estimates achieving 97% accuracy 	
FieldDock	Donald Danforth Plant Science Center
<i>Computer Vision / Agricultural AI – OpenCV, Docker, AWS</i>	<i>December 2023 – May 2024</i>
<ul style="list-style-type: none"> 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	Black Data Processing Associates (BDPA)
<i>Web Development – JavaScript, MongoDB, React, Express.js, Node.js</i>	<i>June 2022 – August 2022</i>
<ul style="list-style-type: none"> 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	Personal
<i>Web Development – JavaScript, React, Redis</i>	<i>April 2022 – May 2022</i>
<ul style="list-style-type: none"> Built live tracking and forecasting of Hypixel Skyblock marketplace data using SARIMA 	

OPEN SOURCE CONTRIBUTIONS	
nixpkgs	NixOS Project
<i>Contributor & Package Maintainer</i>	<i>May 2025 – Present</i>
<ul style="list-style-type: none"> 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 	

HONORS AND AWARDS	
Undergraduate Student Researcher Award	University of Nebraska – Lincoln
	<i>2025</i>
Dean’s List	University of Nebraska – Lincoln
	<i>Fall 2024 - Spring 2025</i>

VOLUNTEER	
St. Louis Foodbank	<i>St. Louis, MO, United States</i>

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