Mario Daniel **Panuco**

Graduate Student, Applied Mathematics

San Jose, CA; Santa Cruz, CA

(408) 466-3553 | mpanuco@ucsc.edu | mdpan.dev | MarioDanielPanuco | Mario-Daniel-Panuco

Education

University of California, Santa Cruz — *Santa Cruz, CA*

MSc., Applied Mathematics — *Sep. 2023 - May 2024*

University of California, Santa Cruz — *Santa Cruz, CA*

BSc., Computer Science Engineering, GPA: 3.51 — *Sep. 2021 - Sep. 2023*

- Relevant courses:
  Algorithms: Data Structures, Algorithm Analysis, Modern Algorithmic Toolkit;
  Computer Systems: Computer Architecture, Functional Programming, Systems Design;
  Mathematics: Linear Algebra, Mathematical Methods For Engineers, Artificial Intelligence, Computational Methods and Applications

DeAnza Community College — *Cupertino, CA*

Transfer GPA: 3.90 — *Sep. 2019 - May 2021*

- Dean's Honour List: F19, W20, F20, W21, S21
- Relevant courses: Calculus, Discrete Math, Data Structures and Algorithms, Java, C++

Work Experience

Baskin Engineering, University of California, Santa Cruz — *Santa Cruz, CA*

Grader/Reader for CSE 140 - Artificial Intelligence — *April 2023 - June 2023*

- Assessed and provided constructive feedback on student examinations, focusing on their understanding and application of core AI principles: Constraint Satisfaction Problems, Adversarial Search, Markov Decision Processes, and Reinforcement Learning, Knowledge Representation, Bayesian Networks, and Machine Learning
- Worked closely with faculty to discuss and resolve any discrepancies in grading, upholding fairness and accuracy

LSS at University of California, Santa Cruz — *Santa Cruz, CA*

Supplemental Instruction Leader - CSE 20 - Introduction To Python — *Jan. 2023 - March. 2023*

- Provided students with supplemental instruction/material for Python in the form of in-person instruction & Jupyter Notebooks
- Helped diagnose and guide student's debugging strategies
- Helped students recognize design patterns applicable to CSE 20 like: both linear/binary recursion, sorting, and OOP

LSS at University of California, Santa Cruz — *Santa Cruz, CA*

Small Group Tutor - CSE 102 - Introduction to Algorithm Analysis — *Aug. 2022 - Dec. 2022*

- Facilitated a peer-centered learning environment for students
- Assisted students in developing skills to meta-cognitively recognize design patterns to algorithmic problems as well as in developing skills to formally communicate mathematical abstractions
- Provided insight to applying algorithmic thinking, optimizing for time and space complexity, to tackle algorithmic problems

Projects

PlankAI - Rust

Independent Project — *July. 2022 - Present*

- Utilized knowledge of Statistics, AI, and Scientific Computing to design a computational model simulating interactions between agents and their environment
- Constructed the codebase using Rust packages such as nalgebra, rand_chacha, serde, and wasm_bindgen
- Employed a test-driven approach for the development of the Neural Network and Genetic Algorithm modules

Toys.R.ust.Server - Rust

Independent Project — *July. 2022 - Present*

- Used asynchronous runtime libraries such as Axum, WASM-bindgen, and tower_http to construct a robust web server
- Facilitated deployment using a Virtual Machine instance via Google Cloud Platform
- Implemented robust error handling and logging mechanisms to ensure smooth server operations

CLI Countdown Timer - Rust

Independent Project — *Jun. 2022*

- Developed a precise countdown timer with nanosecond accuracy
- Leveraged commonly used Rust packages for CLI tools, including termdown for terminal manipulation and clap for argument parsing

Video Game Store (Triforce Games) - Java

Data Structures and Algorithms Final Project, CIS 22C — *2021*

- Engineered various data structures throughout the quarter to be used for the final project. Including List, BST, Min-Heap, and Hash-Table
- Conceptualized and implemented demo databases along with CLI interfaces for demo customers and employees
- Directed and managed project synchronization and version control within a team of five
- Implemented a comprehensive testing suite to ensure correctness of data structures and algorithms

Honors & Awards

2021 **Recipient**, UCSC Campus Merit Hihn Scholar *Santa Cruz, CA*

Skills

Programming Languages Python, Rust, C, Bash, C++, Julia, MATLAB, LaTeX, Java, RISC-V Assembly

Frameworks

Language	Frameworks
Python	Pytorch, Numpy, Polars, Pandas, SciPy, Ski-kit Learn, FastAPI, Seaborn
Rust	Axum, Tokio, Clap, Tower-HTTP, Tracing, Serde, Polars, TUI, WASM_Build
Julia	Statistics, Linear Algebra, SparseArrays, Bio

Operating Systems Unix: Linux (Ubuntu/Debian) and MacOS; Windows 10

Applications Pycharm, CLion, MATLAB

Tools GIT, Markdown, Shell Scripting, Anaconda, Docker, Google Cloud Platform

Languages: English, Spanish, French