MICHAEL TAURASO

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Education:

- **University of Washington**—Seattle, WA
  M.S. Physics (2024 expected)3.92 GPA
  - Coursework: Galactic Astronomy, Quantum Computing, Statistical Mechanics, General Relativity, Cosmology, High Energy Astrophysics
  - Capstone Research on Gravitational Wave Data Analysis for LISA mission

- **Harvey Mudd College**—Claremont, CA
  B.S. Computer Science 20083.24 GPA3.3 GPA (Physics)3.5 GPA (CS)
  - Coursework: Quantum Mechanics, Classical Mechanics, Computational Physics, Classical Field Theory, Upper Division E&M
  - Outstanding Clinic Team Award 2006/2007 for capstone project
  - Wing Tam Software Development Award 2005/2006 for video game "Goudy Stout"

- **Santa Rosa Junior College**—Santa Rosa, CA
  A.A. Mathematics 20043.89 GPA

Research:

- **LISA Gravitational Wave Data Analysis**—Master's Degree Capstone
  Prof Joey Shapiro Key: Sept 2022 - present
  - Data analysis for the Laser Interferometer Space Antenna (LISA) mission
  - Ported Global LISA Analysis Software Suite (GLASS) to UW supercomputer cluster
  - Modified GLASS to use a new set of trans-dimensional MCMC search parameters
  - Inferred distance to Ultra-Compact Binaries (UCBs) in LISA simulated data using a Bayesian prior on distance
  - Modified ~5 KLOC of C and Python on GLASS project

Projects:

- **Quantum Computer Simulator**—Quantum Computing Final Project
  October 2022 - December 2022
  - Developed an interpreter for OpenQASM 2.0 in Rust
  - Implemented full scope of OpenQASM 2.0 including classical control constructs
  - Tested simulator on several non-trivial OpenQASM programs
  - Documented tensor formalism used to hold quantum circuit state

- **Smooth Particle Hydrodynamic Simulation**—Self Guided Study
  October, 2021 - December 2021
  - Modeled Hydrostatic Equlibrium of a Jupiter-like planet on a laptop computer
  - Developed Smooth Particle Hydrodynamic simulation using Unity high performance C# and Data Oriented Technology Stack (DOTS)
  - Developed N-Body gravitational simulation using multi pole approximation
  - Developed Barnes-Hutt tree code gravity within Unity Physics on CPU and GPU
  - Achieved real-time performance via profile-guided optimization

- **3D Interactive Museum Exhibit**—Bachelor's Degree Capstone
  Prof. Ran Libeskind-Hadas: September, 2006 - May, 2007
  - Lead student team of 5 during the spring semester to deliver a musem exhibit to Los Alamos Nat'l Labs Bradbury Museum
  - Delivered 3 touch-screen mini-games showcasing physical principles behind particle acceleration, neutron crystallography, and proton radiography
  - Built a 3d engine in C++ that rendered lab-sized and particle-sized length scales
  - Integrated a Fortran based simulation of neutron scattering into crystallography game
  - Won Outstanding Clinic Team Award 2006/2007

Work Experience:

- **Lyft**—Seattle, WA

  Software Engineering Manager, Test Platforms: December 2018 - Jan 2021
  - Managed and mentored 5-15 software engineers on multiple teams owning test and load simulation tools on the deploy path for 1000+ engineers
  - Drove strategic direction of testing and simulation tools area by partnering with infrastructure and product teams
  - Mentored staff software engineers and engineering managers on career growth
  - Chaired promotion committee for mid-level software engineers
  - Authored and proposed promotion process changes to enable Diversity Equity and Inclusion (DEI) objectives
  - Teams enabled developer velocity by increasing tool reliability and efficiency
  - Team built Alpha of next-generation Kubernetes-based testing system, unifying load simulation and testing

- **Square**—San Francisco, CA

  Software Engineer & Manager, Mobile & Embedded CI: August, 2014 - September, 2018
  - Provided vision, direction, and mentoring to a team of 5 across 2 time zones
  - Provided Continuous Integration(CI) testing & release infrastructure for mobile apps, embedded firmware, and custom Android operating system
  - Authored new execution framework for build, test, and signing of iOS apps in Ruby
  - Founded and trained on-call rotation for client build & test infrastructure
  - Authored and open sourced git-fastclone to speed up git operations
  - Authored system to deploy and update Xcode and the iOS simulator in production
  - Increased iOS CI reliability from 85% to 99.5% using Wilson-score based metrics
  - Scaled iOS test cluster from 8 to 300 machines, reaching 500k test-hours per year
  - Led creation of standard hardware test units
  - Scaled hardware test cluster 2x to enable flagship hardware products
  - Team re-architected Android UI test infrastructure, moving it to the cloud

- **Asana**—San Francisco, CA

  Software Engineer: February, 2012 - January, 2014
  - Managed continuous test cluster for ~20 engineers
  - Parallelized continuous test cluster and moved it to AWS
  - Participated in 24/7 on-call rotation for production web application
  - Re-architected load balancer on AWS to solve performance issues, harden TLS posture
  - Javascript frontend for personal projects feature
  - Data model and migration to support 100-500 person organizations

- **Beyond Blues**—San Francisco, CA

  Dance Community Organizer: November, 2011 - May, 2015
  - Organized 2 weekly social partner dances together with a team of 2-5
  - Hired, coordinated, and paid music acts, instructors, staff, volunteers, and venues
  - Directly responsible for advertising, opening, closing, and any un-staffed position
  - Created fun, inclusive, and unforgettable experiences for hundreds
  - Trained participants in dance community norms and mediated interpersonal conflicts
  - Transitioned both dances to community non-profit ownership

- **OnLive**—Palo Alto, CA

  Software Engineer: June, 2008 - December, 2011
  - Authored Cmake build system for ~100 KLOC C++ codebase across 10 platforms
  - Wrote and maintained installer and browser plugin for OnLive client software
  - Authored client bootstrap protocol and implemented self-update functionality
  - Implemented packet replay and video dump functionality in the client

Technology

- **Expert** — Ansible, Bash, C, C++, Code Signing (iOS & Windows), GCC, Git, CMake, iOS, Jenkins, OS X, XCode

- **Skilled** — AWS S3, Bitbucket, Chef, Cocoapods, Cygwin, Google Sheets, Groovy, Homebrew, Javascript/ECMAscript, Jira, Linux, Ruby, TLS/SSL, Visual Studio, Python

- **Proficient** – Android, astropy, AWS EC2, AWS ELB, AWS VPC, FreeBSD, C#, CSS, Go, Grafana, HTML, Java, LaTeX, MS Office, matplotlib, nginx, numpy, OpenGL, PHP, Perl, RPM, Ruby on Rails, Rust, Slurm, SDL, SVN, SQL, Unity DOTS, VS Code, Vim, VirtualBox, VMWare, Windows

- **Familiar** – Arduino, AWS Lambda, AWS Route53, AWS IAM, CVS, Docker, ESP32, Fortran, Github Actions, Google Firebase, GNU Autotools, JTAG, Jupyter, Lmod, MPI, Mathematica, Maple, OpenStack, Qemu, React, Sage, SML/NJ, Unity, Vulkan