

NICHOLAS D. KOSTIN

Email: nkostin4@protonmail.com
GitHub: <https://github.com/nkostin4>
Mobile: +1 719-271-9108

Education

Colorado School of Mines
BS in [Engineering Physics](#), *Magna Cum Laude*

Golden, CO
May 2022

Cumulative GPA: **3.89**

Clubs and Activities: Society of Physics Students, Math Club CSM

Work Experience

Head Teaching Assistant

Golden, CO

Physics II — Electromagnetism and Optics

January 2019 — June 2021

- Contributed to a program that increased the pass rate of the course by 40%
- Facilitated group problem-solving and lab activities; held frequent office hours and homework help sessions
- Created exam rubrics for other TAs; hosted exam reviews with live audiences over 300 students
- Designed and compiled lecture slides that became integrated into the standard course curriculum

SAGE Affordable Tutoring

Colorado Springs, CO

Instructor

February 2018 — Present

- Provide individual and small-group tutoring in science and mathematics; help students set and achieve high academic goals
- Sharpen test-taking strategies to maximize student potential, especially on AP exams
- Regularly communicate with parents to discuss student growth and implement viable study plans

Technical Skills

Scientific/Numerical Computing:

Python, including `numpy`, `scipy`, `sympy`, and `manim` libraries. • Mathematica • MATLAB • R

General-Purpose Programming:

Go • C • C++ • POSIX-compliant shell scripting • Processing

Markup Languages & Vector Graphics:

Troff / Groff • L^AT_EX, including TikZ and PGF • HTML / CSS • Asymptote • R markdown

Operating Systems:

Server: Debian, OpenBSD, Ubuntu* • Desktop: Artix / Arch Linux, NixOS, Gentoo, Void Linux

*Currently administer a Minecraft server using Amazon AWS

Other:

Raspberry Pi / Arduino / FPGA programming • Technical Writing • Data Analysis / Presentation

Projects

Fractional Charge Physics in Two-Dimensional Systems

July 2020 — May 2021

Advisor: [Dr. Mark Lusk](#)

- Provided simulation tools for modeling fractional charge statistics and the behavior of anyons in lattices, thereby forming a foundation for quantum computing
- Wrote Mathematica code to elucidate fractional charge in polyacetylene and graphene; extended computational modeling to consider new vortex dynamics
- Presented results of research to panel of physics faculty

Obstacle Avoidance Robot

December 2021

Digital Circuits Final Project

- Designed and assembled a robot that scans its surroundings in real-time, avoiding obstacles and driving indefinitely; prototype integrated an ultrasonic sensor, motor driver, and a comparator circuit into an Arduino-based design