Samuel Perales

Full Stack Web Developer

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Personal Statement

Planning to pursue a PhD in Mathematics, I participated in research groups all throughout college. I recently decided my enthusiasm for software is better suited to industry, so I declined my graduate offers and shifted my focus to a career in web development.

Experience

TEXAS EXPERIMENTAL GEOMETRY LAB | Researcher

January 2020 – Present | Austin, Texas

- → Lead a team of four undergraduates throughout a long-term project.
- → Developed novel algorithms for computational proofs of high level mathematical statements of interest and optimized them to run in real time.
- → Designed and documented interactive web applications for the research site.

COMPUTATIONAL ECOLOGY LAB | Researcher

June 2021 – March 2022 | Arizona State University

- → Lead a team of three undergraduates through multiple projects under a National Science Foundation grant.
- → Designed and optimized mathematically rigorous stochastic models for predicting social insect behavior.
- → Developed an interactive Python GUI for researchers to collect data.
- → Analyzed high volumes of spatio-temporal data to extract meaningful conclusions in an ecological context.

COMPUTATIONAL IMAGING LAB | Researcher

June 2020 – August 2020 | Harvey Mudd College

- → Worked with a partner to design, code, construct, and test a working 3D printed microscope and contributed to the UC2 optical open-standard.
- → Implemented Fourier Ptychographic Microscopy algorithm in Python for combining low-resolution input images into a super-resolution output image.
- → Further implemented EPRY-FPM for correcting chromatic aberrations and a multiplex FPM model for optimized image recovery.

Projects

LAYOLAY | React + Firebase

2021 - Current

- → Cofounded 3D printing ecommerce startup built with React and Firebase, styled with Tailwind and daisyUI, and deployed to Netlify.
- → Collaborated with a partner over several months to develop major customer-facing features and a scalable backend for high order volumes.
- → Implemented user authentication, PayPal payment processing, realtime chat, Three.js object visualizations, and full profile creation pathway.

LUNCHLINER | React + Google Maps API

2022

- → Collaborated with a partner to develop a mobile responsive UI for locating restaurants along a Google maps route.
- → Designed SVG assets in Illustrator to improve the user experience.

Skills

LANGUAGES

Python • JavaScript • HTML • CSS • Processing • Swift • R • MATLAB

WEB DEVELOPMENT

React • Firebase • Redux • Tailwind • Netlify • REST • Google Analytics

OTHER

Git • Jupyter • LaTeX • Adobe Illustrator • Gimp

Education

THE UNIVERSITY OF TEXAS AT AUSTIN

Bachelors in Mathematics
Certificate in Computer Science
Aug 2018 - May 2022 | Austin, Texas
GPA: 3.75 / 4.0

Coursework

- Software Engineering
- Web Programming
- Mobile Computing
- Graphics and Visualization
- Scientific Computing
- Functional Analysis
- Applied Statistics
- Linear Algebra

Activities

- Math Club (Vice President)
- Sunday Morning Math Group
- Research Training Grant
- Freshman Research Initiative
- Directed Reading Program
- Math, CS, and Physics Tutor

Academic Blog

CAPSNCRUNCH.GITHUB.IO

I make frequent posts about my academic work and personal projects.