Steve Colvin, PhD

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Experience

Founder at Torte [view on Github] [see the UX]
Part-time Jan 2019 - Aug 2019; Full-time Sep 2019 - Jul 2022

- Conceived, designed, programmed, and launched two-sided platform on iOS, Android, and web
  - Restaurant app to create menus, collect orders, manage payments, and analyze performance
  - Guest app/webapp to collaboratively order and pay from their own devices
- Generated nearly $8,000 in sales operating across four restaurants with more than 200 users
- Reduced time servers spent at tables by over 33% with item-level bill splitting
- Innovated customizable photo panels for restaurants to highlight top sellers and daily specials
- Created dietary filters to customize menus according to allergies and restrictions
- Implemented novel UX with tap-and-swipe gestures for item splitting and selection, respectively
- Collected in-app user feedback on restaurant experience to drive improvements in food and service
- Gained customer empathy by acting as server to directly observe and respond to user feedback
- Filed for intellectual property protection, established novelty through competitive market analysis
- Employed Google Cloud Vision for optical character recognition in scan-and-split alpha product

PhD Graduate at the Massachusetts Institute of Technology (Feng Laboratory)
Sept 2015 - Feb 2023 (part-time during Torte and Mycelium)

- Initiated and led two projects awarded over $1M in funding
  - Genetic engineering of novel Fragile X mouse line with 1KB pure-GC insert using CRISPR
  - Innovative gene therapy strategy to treat Rett Syndrome with Cas13b-ADAR (REPAIR)
- Wrote proposals supported by research to achieve supervisor buy-in of projects
- Managed four reports while coordinating among teams to advance project goals
- Analyzed technical data, published insights and future guidance for the field in peer-reviewed article
- Taught recitations for Introductory Biology and Cellular Neurobiology as seminar leader

Faculty at Oxbridge Academic Programs
Jun 2019 - Jul 2019

- Instructed high school students to neuroscience competency in accelerated course

Research Technician at the University of Michigan (Kwan Laboratory)
Oct 2013 - Jul 2015

- Oversaw two undergraduates students and trained entire lab on new experimental protocol
- Developed novel multi-step process to study protein translation in the dendrites of neurons
- Improved RNA yield of Quant-It Ribogreen results by constructing thermoelectric cooling rig

Undergraduate Research Student at the University of Michigan (Raymond Laboratory)
May 2010 - Aug 2012

- Led experiments and guided computational team to model eye formation

Projects

vexillologycontests.com (monthly competitions for user-generated flags) [view on Github]

- Added modal to reduce transition time from 680 ms to <80 ms and eliminate complex scrolling logic
- Implemented keyed voting to speed user interaction and permit full keyboard navigation
- Established development environment with testing data and environmental variables
- Refactored codebase to improve readability, caching, and follow best practices for React hooks

Mycelium (a crowdsourced dataset to power AI in biotechnology - spun out from a class project)

- Delivered **Demo Day pitch**, awarded highest pre-seed funding from venture capitalist judges
- Devised and executed customer discovery strategy with Link Ventures
- Prototyped interface and user flow in Figma

RGB (pixellated art project)
- Wrote Python code to convert pixel art into SVG files with separate red, green, and blue channels

HomeFinder (application to web scrape and track apartment listings)
- Built Javascript (React.js) frontend and Python (Flask) backend with SQLite

Volunteer at Peace Neighborhood Center
2013-2015
- Mentored middle and high school students

EDUCATION (LONG FORM)

PhD from the Massachusetts Institute of Technology
Graduated Feb 2023 in Biology (research focus: neurobiology)
Advocated for peers as founding member and representative of Biology Graduate Student Council

MSE from the University of Michigan
Graduated May 2013 in Biomedical Engineering (concentration: biotechnology)

BS with Honors from the University of Michigan
Graduated Apr 2012 in Cellular and Molecular Biology
Certificate of Entrepreneurship

SKILLS

- **Programming skills:** Javascript, Python, React Native, React, NoSQL, SQL, React Navigation, Redux
- **Software tools:** Git, Google Cloud (Firestore, Functions, Storage, Authentication, Hosting)
- **Design platforms:** Illustrator, Figma, Photoshop
- *Other interests:* Mycology (mushrooms), fermentation, vexillology (flags), beekeeping, tea

PUBLICATIONS [view on ORCID]

- Modeling Autism Spectrum Disorder: Fragile X syndrome and Rett syndrome (dissertation)
- Colvin S, Lea N, Zhang Q, et al. 341 repeats is not enough for methylation in a new fragile x mouse model. eNeuro. 2022;9(5):ENEURO.0142-22.2022.
- Wilde JJ, Aida T, Del Rosario RCH, et al. Efficient embryonic homozygous gene conversion via RAD51-enhanced interhomolog repair. Cell. 2021;184(12):3267-3280.e18.
- Colvin SM, Kwan KY. Dysregulated nitric oxide signaling as a candidate mechanism of fragile X syndrome and other neuropsychiatric disorders. Front Genet. 2014;5:239.
- Raymond PA, Colvin SM, Jabeen Z, et al. Patterning the cone mosaic array in zebrafish retina requires specification of ultraviolet-sensitive cones. PLoS One. 2014;9(1):e85325.