

Education

Stanford University

B.S. in Electrical Engineering
Minor in Mathematics
Expected 2022

M.S. in Computer Science
Expected 2023

Coursework

Signal Processing and Control Theory
Operating Systems
Algorithms & Data Structures
Digital System Design
Analog Circuit Analysis
Real Analysis, Probability Theory, and
Linear Algebra
Mechanics, E&M, Quantum, and
Device Physics

Awards

- ACM Cutler-Bell Prize (2019)
- Apple WWDC Student Scholarship (2016, 2017, 2018)
- Google Science Fair Regional Finalist (2019)
- Recognized as a Young Innovator to Watch at the Consumer Electronics Show (CES 2018)
- Eagle Scout and Silver Palm (2018)

Publications

Surgical Site Surveillance through Convolutional Neural Networks

IEEE Bioinformatics and Biomedicine
December 2018
ieeexplore.ieee.org

A Domain Adaptation Framework for Medical Image Segmentation

Springer LNCS
September 2018
arxiv.org/abs/1810.05732

Skills

Python • C++ • C • Matlab • Swift
• Verilog • JavaScript • PyTorch • Java

Experience

Apple Inc. | Research Software Engineering Intern Remote

June 2021 - Present
• on the Health Software team.

Stanford Byers Center for Biodesign | Course Staff Stanford, CA

March 2020 - Present
• Leading efforts to build an open-source community for the *CardinalKit* project.
• Hosting multiple technical workshops and office hours on iOS development and digital health. Assisting *over 10* research teams using CardinalKit.
• Helping instruct **CS/MED 342: Building for Digital Health** in Winter 2020.

Stanford School of Engineering | Undergraduate Researcher Stanford, CA

March 2020 - Present
• Developing a framework for circuit fixed-point bit-width optimization via gradient descent, opposed to traditional techniques like simulated annealing.
• Designed a unique loss function for area and error optimization with lookup table implementation. Improved circuit area by as much as *20%* in comparison to state of the art techniques.
• **Tools:** *Python, PyTorch, NumPy, SciPy, various optimization packages*

UC Berkeley Artificial Intelligence Research | Research Intern Berkeley, CA

June 2018 - August 2018
• Designed multiple deep neural networks for brain tumor segmentation in multimodal MRI scans.
• Developed a variety of different 2D segmentation algorithms to evaluate axial brain slices one at a time, including CycleGAN generated data.
• **Tools:** *Python, TensorFlow, Keras*

Projects

CardinalKit | Open-source project - Core Contributor cardinalkit.org

- Building a better platform for creating, managing, and scaling digital health apps.
- Constructing documentation, webpages, and software to improve ease of access and customizability of research apps.
- **Tools:** *Swift, Xcode, React*

Theia | Mobile App varunshenoy.com/theia

- Theia is a system for automated postoperative wound assessment with a convolutional neural network based backend and iOS mobile app.
- **Tools:** *Swift, Xcode, Python, Flask*

Summit | Mobile App varunshenoy.com/summit

- Summit helps busy people read the news in a matter of seconds by summarizing the news using natural language processing techniques.
- Accumulated over 20,000 downloads. Trended on the App Store, reaching the top 100 free news apps in over 20 Countries. Added to Apple's "New Apps We Love" in June 2016.
- **Tools:** *Swift, Xcode, NLP*