# Vincent Cai

Website: vincentcai.com |LinkedIn: https://www.linkedin.com/in/vincent-cai/

## EDUCATION

**Princeton University,** Princeton, NJ Expected Grad 2026

*B.S.E. in Electrical and Computer Engineering* | GPA: 3.77

Minors/Certificates in Computer Science and Engineering Physics

**Relevant Coursework:** Experimental Methods in Quantum Computing (ECE 457), Quantum Optics (ECE 456), Quantum Theory (PHY 305), Quantum Mechanics (PHY 208), Classical Mechanics and Electromagnetism (PHY 103-106), Differential Equations (MAE 305), Honors Linear Algebra (MAT 217), Advanced Vector Calculus (MAT 203), Information Signals (ECE 201), Circuit Design (ECE 203), Electronic and Photonic Devices (ECE 308), Logic Design (ECE 206), Intro to Programming Systems (COS 217), Algorithms and Data Structures (COS 226)

## SKILLS & INTERESTS

**Programming Languages:** Python (+Numpy, Pandas, SciPy), JavaScript/TypeScript, C, C++, LaTeX, Java (fluent); Dart, ARM Assembly Language, Verilog HDL, PHP (familiar)

**Other Software Technologies:** React/Next.js, SciPy/NumPy, Google Cloud Platform and Firebase, Node/Express.js and server-side JavaScript, Linux, Vim, Flutter, Scss and CSS frameworks

**Interests:** Applied Physics, Quantum Computing, AI/ML, Theoretical Math, Aerospace

## PROJECTS

**The New Maps Project,** *nmp.vincentcai.com* Summer 2020 - September 2022

- Built a map editing/analysis software and algorithm to redraw US congressional districts
- Won 2020 Congressional App Challenge for CT-05 and Hack for the People 2020 GCP Award

**NFL Predictions**, *vincentcai.com/predictions* Summer 2022 - Present

- Predict victor, point differential, and competitiveness of NFL Playoff matches using machine learning

**Classical and Quantum Waves**, *vincentcai.com/waves* Jan 2024

- Visualizations and animations of numerical solutions to discrete wave equation and Schrodinger equation (for arbitrary potentials), computed using a Python script. Many examples.
- Notes for mathematical derivations and explanations

## WORK/ACTIVITIES

Development and Partnerships, **HackPrinceton**, Princeton, NJ July 2022 - May 2023

- Taught technical workshops at hackathon on machine learning and app development, and maintain software used to run hackathon, including website and registration portal

Corporate Contacts Manager, **Business Today,** Princeton, NJ February 2023 - Dec 2023

- Secured over $130,000 in sponsorships and met with 130+ C-Suite executives in Atlanta, Washington DC, Dallas, Houston, and Austin for Business Today's student-run International Conference.

## AWARDS/HONORS

**HackHarvard,** 1st place CareYaya Prize for health technologies October 2023

- Built frontend and api for machine learning project on EEG scan data

**Princeton QuBlitz,** 3rd place individual December 2023

- Quantum and classical computing competition at Princeton