

# ANTHONY ZHAI

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## EDUCATION

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### Princeton University

*B.S.E in Computer Science, Minor in Applied Math*

Activities: AI@Princeton, Princeton University Science Olympiad

Princeton, NJ

GPA: 3.8/4.0

## EXPERIENCE

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### Predigle

*Software Engineer Intern*

May 2024 - Aug 2024

- Developed neural network and random forest models for classifying insurance claim overpayment reasons. Using 400,000+ data points, performed data cleaning, feature engineering, and model training to achieve 97% accuracy. In first batch, successfully classified \$250,000+ worth of new insurance overpayments.
- Created end-to-end pipeline for automatic classification of refund reason for unlabeled scanned insurance documents, using Optical Character Recognition (OCR) and machine learning. Allowed client to tap into 150,000+ additional data points for insurance claim overpayment model training.
- Developed production software to perform segmentation on 100k+ of client's patients. Uses technographic data-driven models to identify tech-inclined patient cohorts for increasing digital payment adoption.
- Packaged and deployed Predigle's software to client environments using Docker, AWS, and GCP.

### Predigle

*Software Engineer Intern*

May 2023 - Aug 2023

- Created first prototype of Predigle Quest, a Project Delivery Accelerator app developed using Atlassian Forge that allows teams to perform project initiation and agile execution in Jira. Originally developed for billion+ dollar evaluated client and later monetized as an official Predigle software product.
- Developed mobile app to allow users to interact with 3-D avatar for increasing engagement with physical therapy exercises through gamification process.

### Princeton University

*Machine Learning Research Intern*

Jun 2022 - Aug 2022

- Used the Fast Fourier Transform algorithm to develop a novel neural network for modeling magnetic core loss, utilizing <20% parameters than LSTM networks with <15% training time and equal performance.
- Developed custom processing layers using PyTorch and Tensorflow APIs to streamline model usage and decrease training time by 10%.
- Analyzed data down sampling methods for frequency and peak flux density to assess the relative significance of variables in predicting core loss and to reduce the parameter search space by 20%.

## PROJECTS

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**CGBNet: A Deep Learning Framework for Compost Classification** *Python, Tensorflow, Keras, Computer Vision, Deep Learning, Transfer Learning*

CGBNet is a framework for classifying compost to help automate composting. Co-first authored research article for CGBNet that was published in IEEE Access (3.9 impact factor and 30% acceptance rate).

**Visionary** *Python, Django, Django-Rest-Framework, Flutter, Dart, Tensorflow, Keras, NLP*

Visionary is an app that helps the visually impaired interact with the world through text OCR, object detection, and image captioning through Natural Language Processing and computer vision.

**VirtualMouse** *Python, OpenCV, Mediapipe, PyAutoGUI*

VirtualMouse is a program that uses computer vision and machine learning to process real-time hand movements for controlling a computer GUI.

## SKILLS

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**Programming Languages:** Python, Java, C++, Javascript, Dart, HTML / CSS, SQL

**Libraries:** Tensorflow, PyTorch, Numpy, Pandas, Flutter, React, Node, Flask, Django, OpenCV, Mediapipe

**Technologies:** Git, Bash, Github, AWS, GCP, Docker, Firebase, Figma, NPM, UNIX, LaTeX

## AWARDS

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### Best Hardware Hack

*PantherHacks*

Awarded Best Hardware Hack against over 350 competitors. Created Hygenie, a public safety system that uses computer vision and arduino to enforce proper hand-washing procedures.

### Overall 2nd Place

*HealthHacks (PennApps x Wharton Undergraduate Healthcare Club)*

Created Retro, an application that provides easy access to critical information for first responders in emergency situations and decentralizes the storage of medical records.