# Ryan Goggins

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## EDUCATION

**CARNEGIE MELLON UNIVERSITY**
**SCHOOL OF COMPUTER SCIENCE**
BS in Artificial Intelligence
May 2022 | Pittsburgh, PA

**PHILLIPS ACADEMY**
June 2018 | Andover, MA

**STANFORD UNIVERSITY**
Undergraduate Coursework
Summer 2016 | Stanford, CA
Computer Science 106A (Grade: A-)

## RELEVANT COURSEWORK

(10-403) | Deep Reinforcement Learning and Control (Spring 22)
(11-442) | Search Engines (Fall 21)
(15-440) | Distributed Systems (Spring 22)
(10-417) | Intermediate Deep Learning
(15-455) | Complexity Theory
(15-281) | AI Repr. & Problem Solving
(10-315) | Machine Learning
(11-411) | Natural Language Processing
(15-251) | Theoretical Computer Science
(15-210) | Parallel Data Structures and Algos.
(15-213) | Computer Systems
(36-218) | Probability Theory for CS

## SKILLS

**PROGRAMMING LANGUAGES**
Python • C++ • JavaScript • Java • C • Standard ML (strongly-typed, functional) • x86-64 • PHP • Hack (Facebook) • SQL

**RELEVANT LIBRARIES/FRAMEWORKS**
TensorFlow • PyTorch • Node.js • Sequelize • GraphQL • React.js • Redux • D3.js • PostgreSQL • Docker • Kubernetes • GCP • AWS • Kafka Streams • MySQL

## ACTIVITIES

**AWARDS**
Phillips Academy CTF - 1st place at Phillips Academy; 6th place international • AP Scholar with Distinction • National Merit Scholar

**MISCELLANEOUS**
Chess • Tutoring • Spanish (conversational) • Bouldering • Cooking

## PROFESSIONAL EXPERIENCE

**CMU MACHINE LEARNING DEPT.** | Teaching Assistant
Fall 2021 | Pittsburgh, PA
- Teaching Assistant for Intermediate Deep Learning (10-417)

**GOOGLE** | Software Engineering Intern
Summer 2021 | Mountain View, CA
- Worked on the AViD Search+ team within the Display Ads organization to analyze the correlation between human evaluations of ad campaigns and ad conversion rates for Search and Display ads
- Analysis performed in Python and SQL; findings are used to improve the accuracy of the Predicted Ad Conversion Rate model
- Designed and implemented an advertiser experiment infrastructure to boost experiment efficiency and increase functionality in C++ using Flume (Next-Gen MapReduce)
- Developed a pipeline for identifying ad campaign ineligibility to increase the efficiency of the ad bidding process in C++ and internal Kubernetes

**FACEBOOK** | Software Engineering Intern
Spring 2021 | Menlo Park, CA
- Worked on the Instagram Accurate Information team to create the IG Trend Visualizer for displaying real-time data about viral content relating to politics, social issues, Covid-19 and vaccine dissemination
- Wrote queries in GraphQL and SQL, backend in PHP and Hack, frontend in React and Redux, and data pipelines in Python

**ETSY** | Software Engineering Intern
Summer 2020 | Brooklyn, NY
- Worked on the Offsite Listing Feeds team to develop a pipeline that shows Etsy listings on external advertising platforms like Google Ads
- Leveraged Apache Kafka Streams to write backend architecture in Java to monitor change data capture feeds for a MySQL database
- Developed an Etsy internal API in PHP to process listing prices and shipping costs

**RESPOND SOFTWARE** | Software Engineering Intern
Summer 2018, 2019 | Mountain View, CA
- Designed and implemented the company's notification service from scratch using PostgreSQL, Sequelize, Node.js, GraphQL, and React.js
- Created Long Short-Term Memory (LSTM) networks and deep neural nets to detect malicious web proxy traffic and identify malware beaconing

## PROJECTS

**HIGH RESOLUTION ABSTRACT ART GENERATION**
August - December 2020 | Pittsburgh, PA
- Created adaptations of DCGAN, Wasserstein GAN, EBGAN, BEGAN and NVIDIA's StyleGAN2-ada for generating pieces of abstract art in Intermediate Deep Learning (10-417)
- Leveraged variants of upscaling models including EDSR and SRNTT to achieve super-resolution of 16x along with transfer learning-based approaches like MZSR
- Produced quantified metrics for evaluating my models, leveraging Frechet Inception Distance, Kernel Inception Distance, Precision, Recall, and Inception Score