

# Felix Hu

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## Education

### Duke University | Trinity College of Arts and Sciences

05/2023

Major(s): Computer Science, Math

Cumulative GPA: 3.96/4.00

Student Organizations: Duke Undergraduate Machine Learning President, Duke Catalyst Tech Society, ACM International Collegiate Programming Challenge

**Relevant Coursework**: Design and Analysis of Algorithms, Databases, Computer Architecture, Operating Systems, Computer Networks, Statistics and Data Analysis, Regression Analysis, Advanced Probability, Linear Algebra, Full Stack Development, Machine Learning, Machine Learning Algorithms (graduate), Artificial Intelligence (graduate), Real Analysis, Abstract Algebra, High Dimensional Data Analysis, Algorithmic Trading (graduate), Asset Pricing and Risk Management

## Professional Experience

### Snorkel AI | Software Engineer Intern | Infrastructure

05/2022 — 08/2022

- Built and deployed Lighthouse, the fleet provisioning system for Snorkel Flow instances, using NextJS, FastAPI, Kubernetes
- Took initiative to optimize PostgreSQL queries and Snorkel Flow data pipelines, speeding up critical model training and data ingestion functions by over 2x

### Facebook (Meta) | Software Engineer Intern | Ads Delivery Intelligence

05/2021 — 08/2021

- Designed C++ ads ranking system by selecting features, devising ranking metrics, running regression tests
  - Saved 4% of memory in the ads serving pipeline, all while increasing the quality of the ad types that make up 60% of Facebook revenue
- Initiated a change in ad filter logic to consume new ad types, responsible for processing over 28 million ads per day

### L3Harris Technologies | Software Engineer Intern | Ad-hoc Networks

06/2020 — 08/2020

- Developed C++ software that passes communications data through mesh networks and facilitates inter-vehicular cooperation
- Overhauled legacy code in L3Harris' backend scalable framework to ensure robustness and modernize library for new components; refactored an additional ~3k lines of code

## Research Experience

### Robotics and Deep Learning Research Under Prof. Boyuan Chen

07/2022 — Present

### Federated Learning Research Under Prof. Neil Gong

01/2021 — 08/2021

- Develop MXNet frameworks to simulate and defend against byzantine attacks in federated learning settings

### Washington University School of Medicine | Research Intern

04/2019 — 12/2020

- Contributed to MuSiC2, an open source R software that statistically analyzes genomic data, presented at AACR
- Determine significantly mutated genes by comparing specific gene mutation rates to background mutation rates

## Selected Projects

### Safinia (Washington University Funded Initiative)

04/2020

- Spearheaded a natural language processing-driven educational platform for STDs; used SpaCy and TensorFlow to determine speech intent and generate knowledge graphs from medical websites; managed teams, ML model training, presenting work to VCs, talking to schools in St. Louis

### Buzzfund

02/2020

- Developed a trading service in Python that uses machine learning algorithms such as random forest and boosting on options chains from TD Ameritrade's API to assess trade decisions based on unusual options activity
- Created extensive model backtesting framework

## Awards

### International Collegiate Programming Challenge Top 3 at Duke

2021

*Selected to represent Duke at ICPC competitions*

### USA Biology Olympiad Honors with Distinction, Top ~30 in United States

2019

### USA Computing Olympiad Gold Division

2017

## Technical Skills

Java, C++, Python, R, MXNet, React, PHP, HTML, CSS, Javascript, Node.js, PostgreSQL, Git, AWS