

# Jinay Jain

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## EXPERIENCE

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### Software Engineer

Virtu Financial | New York City, NY

July 2023 – Present

June 2022 – Aug. 2022

- Developing distributed services to support fixed-income on the industry-leading trading software
- Employed garbage-free, low-latency design patterns in **Java** for millisecond-level optimization
- Improved reliability and monitoring of trading system that handles **30%** of all US retail trading

### Software Engineer

University of Delaware, NASA Turbulence Research Team | Newark, DE

Sept. 2022 – May 2023

- Developed an experiment automation framework in **Rust** for NASA-funded turbulence research
- Design a robust, recoverable system to sustain multi-month deployment on the International Space Station

### Machine Learning Intern

Matic Robots | Palo Alto, CA

June 2021 – Aug. 2021

- Created robotic data collection pipeline to train self-supervised models and evaluate SLAM algorithms
- Implemented **Rust** concurrency patterns to deliver a **400% speedup** in 4K video and keypoint recording

Previous Roles: Software Engineer Intern at schoolhouse.world, AI Researcher at DuPont Children's Hospital

## PROJECTS

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### Self-Driving 2D Racecar

Python, PyTorch, OpenCV, OpenAI Gym

- Trained a convolutional neural network to play a racing game through **reinforcement learning**
- Implemented proximal-policy optimization to achieve human-level performance ([demo](#))

### Cadenza – AI-generated piano performances

Python, PyTorch, PyTorch Lightning

- Trained a transformer to generate classical piano music, compared against LSTM performance ([demo](#))
- Implemented transformer with multi-head relative attention from scratch in **PyTorch**

### Eddy – Mind mapping at the speed of thought

Python, FastAPI, React, OpenAI API (GPT, Whisper)

- Created a voice-based application to record and organize your thoughts in real-time
- Used embedding cosine similarity for automatic grouping and linking of related ideas

## HONORS/AWARDS

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**Best Natural Language Hack, TreeHacks** – 1<sup>st</sup> prize among 1,600 participants at Stanford's hackathon 2023

**Best Audio Hack, NYC Generative AI Hackathon** 2023

**Neo Scholar** – selected to join a community of the top CS students in the country 2022

**U.S.A. Computing Olympiad, Gold Division** 2019

## EDUCATION

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University of Delaware | B.S. in Computer Science, Honors (GPA: 4.0)

Sept. 2020 – May 2023

- Distinguished Scholar (top 100 of 30,000 applicants)
- **Clubs/Activities:** Association for Computing Machinery (President), Kamaal Bollywood Dance Team
- **Relevant Coursework:** Data Structures, Algorithms, Machine Learning, Robotics, Data Mining, Parallel Computing, Linear Algebra, Calculus III. Graduate-Level: Computer Vision, Artificial Intelligence

## SKILLS

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**Languages:** Python, C++, Rust, Java, HTML, CSS, JavaScript, TypeScript, SQL

**Tools/Libraries:** PyTorch, OpenCV, TensorFlow, React.js, Next.js, Git, Docker, Google Cloud