

MEHUL GOEL

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EDUCATION

Carnegie Mellon University - School of Computer Science

BS in Computer Science, Minor in ML | **High Honors Dean's List Every Semester**

Courses: Deep Learning Systems | Intro to Deep Learning | Compilers | Data Structures & Algorithms | Linear Algebra

Pittsburgh, PA

December 2026

4.0 GPA

EXPERIENCE

Software Developer Intern

Hudson River Trading

May 2025 – August 2025

New York City, NY

- Created **RestAPI** fullstack language server for internal file format, used by **>200** employees, in **<5** weeks
- Implemented the **language server protocol**, working with async libraries in **python**, handling **>100,000** line files
- Shipped project from start to finish, collaborating with multiple stakeholders, within **10 standalone features**

MattLab - Computer Vision ML Research Intern

Carnegie Mellon University Robotics Institute ◦ Apple Inc.

August 2023 – May 2024

Pittsburgh, PA

- Developed **CV implementation** based off ResNet50 to segment internal parts of iPhones and iPads
- Implemented **SORT Tracker** for classification of moving parts at **real-time** with **96%** IOU (Accuracy Metric)
- Incorporated **YOLO V8** for top-down model to detect screws, on iPhones, iPads with **93%** accuracy

Introduction to Imperative Programming Teaching Assistant

Carnegie Mellon University

January 2024 – May 2025

Pittsburgh, PA

- Leading interactive labs for **60+** students, teaching fundamentals of coding, C, and data structures
- Working with professors to create collaborative and engaging problem sets to challenge **~500** students
- Held office hours for personalized support, focusing on conceptual questions and complex C programs

PROJECTS

I Want That | Firebase, Flutter (iOS), Gemini, AWS, Vector Embeddings, Google Cloud

June - August 2024

- Published an app** to the iOS app store for the Google Gemini API competition, with over **10 active users**
- RAG-based** multi modal AI companion app that connects users with artists for custom commissions
- Implemented **semantic search** using Gemini's vector embeddings, **>50%** more accurate than standard DB query

Capital Clarity | React Native, Python, MongoDB, Flask, GeminiAI API, Plaid API

April 2025

- Created a **full stack application** for automated spending tracking for BitCamp 2025.
- MongoDB Backend Database** for personalized real-time financial insights powered by Gemini
- Included **sub one second** notifications to combat impulsive purchases, a problem **>42%** of students face

Speech Transformer | Transformer, PyTorch, TorchAudio, WandB, SciPy, Cuda

November - December 2024

- Created a **speech transformer (based on Dong et. al 2018)** to translate English to French in real time
- Implemented BiLSTMEmbedding and **Positional Enc (Attention is all you need)** - improved accuracy by **>20%**
- Overall **top 10%** model in challenge, with a Word Error Rate of 34.9, Character Error Rate of 22.8

RoboBuggy Software Lead | Autonomous Driving, ROS, Python, LiDAR Vision

August 2023 – Present

- In charge of entire autonomous codebase, implementing **perception, controls, vision** for **30mph** vehicle
- Created a **light-invariant** stereo-camera based perception system up to **10m** apart with **< 5%** loss of coverage
- Worked on an **MPC based non-linear controller**, alongside exploring **RL** options for autonomous driving

ChatGPT2 Recreation | Deep Learning, PyTorch, NumPy, ChatGPT, Transformers

June - August 2024

- Took the virtual course **Stanford 231 N**, learning about image classification, RNN's, Transformers, CNN's
- Following Andrej Karpathy's tutorials created a **generative AI** model, based upon ChatGPT2 architecture
- Created MyTorch, replica of PyTorch from only NumPy, including layers like BatchNorm, Convolution, GeLU

GlobaLex | Microsoft Azure, ReactJS, Python, GPT4, Whisper, MongoDB

February 2024

- Developed real-time translation web-calling software for MS Imagine Cup and won **\$5,000** in tech credits
- Utilized OpenAI's **Whisper** API to translate between English and Spanish in real-time on 30 second clips
- Built front-end with **ReactJS** and **MongoDB** including authentication and performed web calls using **Azure**

ACHIEVEMENTS

Bitcamp (2024): Top 3 Hack, Most Innovative

HACK CMU (2023): Best Campus Hack

Microsoft Imagine Cup: MVP Qualifier

AAAI Conference: Top Peer-Reviewed Publication

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, MySQL, R, MatLab, Julia, Assembly x86, C#, Rust, Swift, Go, Dart

Frameworks: ReactJS, NodeJS, Tailwind, Flutter, Electron

Developer Tools: Git, Docker, AWS, Firebase, XCode

Libraries: PyTorch, OpenCV, Scikit, Tensorflow, Ultralytics