

# Mannan Bhardwaj

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## Education

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**Hillsborough High School**  
10th grade

September 2022 – Present  
Hillsborough, New Jersey

## Specialized Skills

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**Programming Languages:** Python, C, C++, Javascript, Java, SQL  
**ML libraries:** Pytorch, Tensorflow, OpenCV, Sklearn  
**ML skills:** CNNs, RNNs, Transformers, IMAML, GPTs  
**Other libraries:** Selenium, Matplotlib, Numpy, Pandas

## Research Interest

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**Deep learning applications within cancer research**  
**Virtual personality cloning**

## Projects

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### MedGPT

*An AI medical assistant*

<https://github.com/MannanB/MedGPT>

- Leveraged GPT-3.5 for chatbot capabilities
- Encoded medical data into a vector database
- Created an interface for users to interact with

### Exploration of Meta-Learning

*Researched different types of Meta-Learning*

- Looked into fine-tuning, few-shot, transfer-learning and IMAML
- Created an article summarizing my findings

### Exploration of Vector Databases

*Researched different types of Meta-Learning*

- Researched different methods and use-cases of vector databases
- Created a guide on how to utilize vector databases

### SnAPI

*A library for asynchronous API calls*

<https://github.com/MannanB/snAPI>

- Used asynchronous coding techniques to speed up API calls
- Implemented API key rotation
- Auto limited API calls to combat rate-limiting

## Professional Experience

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### Independent Software Developer

*SMR Research*

- Created web-scraper
- Cleaned and preprocessed data for research
- Created easy-to-use GUI

June 2022 – July 2022  
Hillsborough, New Jersey

### Intern

*NeuralMetrics*

- Used GenAI to parse company data
- Leveraged AI models to transcribe images
- Generated summaries using Llama

June 2023 – Present  
Hillsborough, New Jersey

## Awards & Honors

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### **Varsity Robotics**

Hillsborough High School

2022-2023

### **Varsity Marching Band**

Hillsborough High School

2022-2023

## Articles and Publications

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### **Virtual Cloning**

*Looked into the use of GPTs in copying someones personality*

### **A Journey Through Neural Compression**

*Explored how to reduce the amount of redundant neurons in a Neural Network*

### **Prompting LLMs with LLMs**

*Used Large Language models to come up with effective prompts for themselves*

### **Unlocking the true power of LLMs with Vector Embeddings**

*A guide on how Vector Embeddings work and how they can be used*

### **Semantic Kernel: An efficient way to integrate AI into your applications**

*An informational article about a new library that allows you to integrate LLMs into applications*

### **MedGPT: Medical knowledge infused with ChatGPT**

*An article showcasing a specialized GPT-3.5 with medicinal capabilities*