

Gurmehar Singh

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EDUCATION

New Jersey Institute of Technology

Newark, NJ

B.S. in Computer Science — GPA: 3.81/4.0

Expected May 2027

- *Albert Dorman Honors College Full Scholar* | Dean's List (All Semesters)
- **Key Courses:** Data Structures and Algorithms, Object Oriented Programming, Linear Algebra, Probability and Statistics, Database Systems, Computer Networks, Machine Learning
- **Leadership:** Teaching Assistant for First-Year Seminar, AIS Vice President of Events, Racquetball Club Secretary

EXPERIENCE

Undergraduate Survey Research Data Analyst

Newark, NJ

Grace Hopper Artificial Intelligence Research Institute, NJIT

Sep. 2025 – Present

- Selected and funded by a NJIT director to scale my personal project into a university-level initiative under NJIT OIE.
- Implemented ML algorithms using Gemini to model prerequisite/corequisite relationships across 1,000 courses, enabling personalized course sequencing and algorithmic recommendations.
- Engineered scalable data pipelines to scrape, clean, and structure NJIT's undergraduate course catalog across 24 departments
- Integrated recommender outputs with interactive curriculum visualization tools (Plotly, Dash), providing actionable insights to faculty and reducing advising workload by 30%.

Research Assistant (Supervised by Prof. Guiling Wang)

Newark, NJ

Center for Artificial Intelligence Research, NJIT

Sep. 2025 – Present

- Developed a benchmark dataset to evaluate LLMs on interpreting steganographic and hidden-depth images, compiling and labeling hundreds of data points.
- Tested multimodal AI models (GPT, Claude, Gemini, InternLM, LLaVa) on visualization and pattern recognition tasks.

AI/ML Intern

Chandigarh, India (On-site)

Welzin — Credzin, flagship credit card optimization platform

Jun. 2025 – Aug. 2025

- Automated extraction and structuring of 300 credit cards with 80 attributes via Firecrawl, cutting manual data entry by 90%
- Built a document-grounded chatbot using RAG with hybrid retrieval—Qdrant (semantic) and MongoDB (keyword), and improved answer relevance by 50% using reranking. Implemented Neo4j-based card recommender with multi-agent LLMs
- Automated Gmail scraping via Google OAuth to parse and analyze 10K transactions using NumPy/Pandas.

Research Assistant (Supervised by Prof. David A. Bader)

Newark, NJ

The Bader Research Lab, NJIT

Sep. 2024 – Dec. 2024

- Applied K-Means to 1.2M phone records, identifying 2 spatio-temporal clusters for crime analysis.
- Used DBSCAN and time-series analysis on ArcGIS-derived cell phone data (647K records) to detect 628 co-traveling groups, aiding crime investigations.

PROJECTS

NJIT Elective Advisor | *Flask, SQLite, NLTK, TF-IDF, AWS EC2* | [Live Site](#) | [GitHub](#)

Sep. 2025

- Engineered a recommendation engine leveraging TF-IDF, cosine similarity, keyword mapping, and NLTK preprocessing for 1,176 courses across 24 departments, achieving 95% recommendation accuracy.
- Deployed a Flask application on AWS EC2, serving 100 users and 2,000 visitors in launch week; recognized by NJIT faculty.

SkillGraph AI | *FastAPI, Gemini API, PyPDF, ReportLab, Material-UI* | [GitHub](#)

Aug. 2025

- Built NLP pipeline with Gemini API and PyPDF to parse resumes, extract data, and generate learning roadmaps.

StockPulseAI | *FastAPI, React, Vite, VADER* | [GitHub](#)

Aug. 2025

- Built FastAPI backend with 2 APIs across 3 endpoints serving 7 data types; ran VADER analysis on 100 weekly headlines
- Orchestrated 6 API calls per query and integrated backend with React/Vite frontend for real-time insights.

Gaming Store Inventory System | *PHP, MySQL, JavaScript, AJAX* | [GitHub](#)

May. 2025

- Built inventory system for a gaming store with PHP and MySQL, enabling real-time item tracking and secure authentication
- Enhanced front-end interactivity with JavaScript, AJAX, and jQuery to deliver a seamless, dynamic browsing experience.

TECHNICAL SKILLS

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

Frameworks / Tools: React, Node.js, Flask, FastAPI, Firebase, Material-UI, Dash, Plotly, LangChain

Data / ML: Pandas, NumPy, PyTorch, TensorFlow, Scikit-learn, Guided BERTopic, VADER

Databases / Storage: MongoDB, Neo4j, Qdrant, SQLite, MySQL, AWS S3/EC2, Google OAuth

Other Tools: Docker, Git, Jupyter, PyPDF, ReportLab