# Sachi Patel

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## EDUCATION

**Barnard College of Columbia University** | New York | *Computer Science & Economics*                    Graduation: May 2027
- **GPA**: 3.91 | Dean's List (All semesters)
- **New Pathways Bridgewater Scholar:** selected as one of 10 students (650+ applicants) to receive 4 years of research funding, mentorship, and career development support from Bridgewater Associates
- **Selected Coursework:** Data Structures, Computer Architecture, Systems Programming, Natural Language Processing, Artificial Intelligence, Applied Machine Learning, AI in Medical Applications, Databases, Discrete Math, Linear Algebra

## SKILLS

**Languages/Frameworks:** Python, Java, JavaScript, C, SQL, MATLAB, R; React, Next.js, Node.js, Flask, FastAPI
**ML/NLP:** PyTorch, scikit-learn, Hugging Face Transformers, LangChain, RAG, LLM evaluation (QAGS, BERTScore)
**Data/Cloud/DevOps:** PostgreSQL, BigQuery, AWS (S3, Lambda, Cost Explorer), Docker, Terraform, Git, CI/CD, REST APIs

## WORK EXPERIENCE

**Depository Trust and Clearing Corporation** | Software Engineering Intern                    Jun. 2025 – Aug. 2025
- Built internal automation to detect idle EC2/EBS volumes across 25+ SYSIDs; notifications drove $350K in savings
- Developed MVP cost-savings dashboard (Python, Flask, REST APIs) integrating CloudAware and AWS Cost Explorer data

**Martina Jasova Lab, Barnard College** | Research Assistant                    Jul. 2024 – Dec. 2024
- Developed text extraction pipeline (PyMuPDF, concurrent.futures) to parse and chunk 12K+ pages of bank annual reports
- Integrated GPT-4o mini for ESG sentiment classification with batched inference, retry logic, and exponential backoff
- Computed alignment scores (cosine similarity) between 50+ banks' ESG claims and actual sustainable lending activity

**Spoken Language Processing Group, Columbia Engineering** | Research Assistant                    May 2024 – Aug. 2024
- Automated extraction of 12 acoustic-prosodic features (pitch, intensity, HNR, etc.) from 200+ audio files via Python/Praat
- Preprocessed features with StandardScaler normalization and z-score outlier removal; validated via t-tests
- Trained SVM and logistic regression classifiers (scikit-learn) on prosodic features to classify empathetic vs. neutral speech

**Rajiv Sethi Lab, Barnard College** | Research Assistant                    Jan. 2024 – Present
- Scraped daily probabilities from Polymarket and 3 forecasting models across 41 electoral events using Python, BeautifulSoup
- Implemented profitability test (Python/MATLAB) simulating trading strategies to compare models vs. market accuracy
- Co-authored paper finding FiveThirtyEight beat Polymarket +17.9% on popular vote; [published](#) in ACM CI '25 proceedings

**Barnard Computational Science Center (CSC)** | Senior Computing Fellow                    Aug. 2024 – Present
- Mentored 120+ students in R, MATLAB, Python across 3 data science courses; debugged code and guided final projects
- Led 30+ office hours sessions supporting Coding Markets, Privacy in a Networked World, and Intro to Data Science

## PROJECTS

**RAG-Powered Codebase Assistant**                    Jan. 2026
- Built RAG assistant that ingests GitHub repos, parses Python code w/ tree-sitter, answers questions via natural language queries
- Implemented semantic search using sentence-transformers/FAISS; integrated LangChain + Ollama for conversational UI

**LLM Factuality Evaluation for Medical Summarization**                    Dec. 2025
- Built QAGS-style pipeline comparing factual consistency of LLaMA-8B, Mistral-7B, DeepSeek-7B on 250 CORD-19 papers
- Created evaluation system: automated question generation (FLAN-T5), extractive QA (RoBERTa), F1 scoring w/ BERTScore
- Optimized pipeline for 8K-token docs; findings on weak factual grounding of models (<0.50 F1) published in project papers

**Full-Stack Restaurant Reservation System**                    Feb. 2025
- Built full-stack app (Flask, PostgreSQL, React) with JWT auth, real-time reservations, and normalized relational schema
- Wrote 40+ unit tests (pytest) with 85% coverage; containerized with Docker/deployed on AWS EC2 via GitHub Actions

## ACTIVITIES & LEADERSHIP

Columbia Multicultural Business Association (Conference Lead) | Society of Women Engineers (Committee Member) | Columbia Women in Computer Science (Event Coordinator) | Grace Hopper Conference '24 & '25 | Columbia DJ Collective