

**PRATEEK GAUTAM**  
Cambridge, MA  
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## EDUCATION

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY, SLOAN SCHOOL OF MANAGEMENT** Cambridge, MA  
*Candidate for Master of Business Analytics, ORC, August 2025, GPA: 5.0/5.0, GRE: 335/340* 2024 - Present

- Coursework: Machine Learning, Optimization Methods, Advanced Analytics Edge
- **Machine Learning Project:** Conducted EDA for ~ 2 million data points and predicted socioeconomic factors responsible for premature patient dropout from substance misuse rehab; used cutting-edge causal inference techniques to assign optimal treatments to patients; reduced expected dropout from 30% to 3% (Python, Julia)
- **Optimization Project:** Formulated a multi-objective dynamic optimization problem to maximize profits under uncertainty in sports betting, while also minimizing detection (Julia)
- **Advanced Analytics Edge Project:** Designed and implemented real-time, end-to-end data pipeline to extract sports odds data; developed Markov Chain simulation to replicate all potential betting outcomes, and optimize stake allocation (Python)
- **Computer Vision Project:** Evaluated synthetic data generation methods (DVAE, VQ-VAE, GANs, Diffusion Models) for improving CNN classification; analyzed how different models' latent representations influence downstream results (Python)
- **LLM Project:** Used LoRA to fine-tune diffusion-based LLM (LLaDA-8B) and successfully reduced gender bias in open-ended prompts (e.g., "tell me a story about a doctor") (Python)

**CORNELL UNIVERSITY** Ithaca, NY  
*Bachelor of Arts in Statistics, Minors in Computer Science and Mathematics (Dean's List 4/5 Semesters)* 2021 - 2024

- Leadership: Cornell Consulting Club (Vice President Recruitment, PM for LEGO and Siemens), Quant Fund (Systematic Equities Lead), Delta Sigma Pi Professional Fraternity (Vice President Finance), Graduate Level Probability Theory TA

## TECHNICAL SKILLS

- Python (TensorFlow, Scikit-Learn, Pandas, NumPy), Generative AI, RAG, Vector Database, MongoDB, OpenAI API

## EXPERIENCE

**MIT GENERATIVE AI LAB / WAYFAIR** Cambridge, MA  
*AI/ML Engineer* Spring 2025

- Developing AI-powered web agent to autonomously navigate the site and detect duplicate product listings (Python)
- Built AI-powered survey system to capture browsing habits and generate personas for web agent browsing style (Python)
- Creating dashboard to monitor AI generated reports, replacing customer surveys for actionable insights (React, Next.js)

**MIT SLOAN OPERATIONS RESEARCH CENTER** Cambridge, MA  
*Graduate Researcher / Front End Developer* Spring 2025

- Developed XGBoost models with SHAP analysis to predict kidney utilization rates and key contributing factors (Python)
- Generated robust synthetic testing data using kernel density estimation and Gaussian sampling techniques (Python)
- Building website with live data integration for organ procurement organizations to optimize organ utilization (React, Next.js)

**LOCKHEED MARTIN** Remote  
*AI/ML Engineer Intern* Summer 2023

- Implemented dashboard to monitor process from the submission of purchase orders to approval by all stakeholders (Tableau)
- Developed and fine-tuned statistical imputation models to predict missing data values in company datasets (Python)
- Utilized NLP techniques to construct model that directly created military equipment purchase orders from PDFs (Python)
- Explored OCR techniques for data extraction and structured data storage from images (Python)

**MASTERCARD** St. Louis, MO  
*AI/Data Science Intern* Summer 2022

- Developed Vector Autoregression model to predict levels of data ingestion from hundreds of different servers (Python)
- Reduced internal team costs by 7% by implementing tuned VAR model with Artificial Intelligence Operations team
- Received training in SQL and Splunk Enterprise data platforms to create live data visualization dashboards (Matplotlib)
- Gained exposure into best practices and hyperparameter tuning of time-series based models such as ARIMA (Python)

## ADDITIONAL INFORMATION

- **Certification:** Advanced SQL for Business Analytics
- **Independent Work:** Published in American Journal of Public Health Research, built agentic college counseling platform for high school students, built an AI powered knowledge graph that detects semantic relationships between nodes
- **Interests:** Boston Celtics, Chess, Coin Collecting, Liverpool FC, Poker, Sports Analytics