

Pranaya Jajoo

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Education

University of Alberta

MASTER OF SCIENCE, COMPUTING SCIENCE

- Courses: Reinforcement Learning I, Machine Learning Essentials, Teaching Assistant: Software Engineering
- Advised by **Prof. Martha White**

Edmonton, Alberta

2024 - 2026 (expected)

University of Illinois at Urbana-Champaign

MASTER OF SCIENCE, TECHNOLOGY MANAGEMENT (MINOR IN SUPPLY CHAIN ANALYTICS) | GPA: 3.96/4.0

— Recipient of the Award for Academic Excellence

Urbana-Champaign, US

2019 - 2020

Veermata Jijabai Technological Institute

BACHELOR OF TECHNOLOGY, ELECTRICAL ENGINEERING | GPA: 7.36/10.0 (FIRST CLASS)

Mumbai, India

2015 - 2019

Experience

Wayfair LLC | LLM's, RAG, SQL, ML, Forecasting

Boston, MA

SENIOR DATA ANALYST, MACHINE LEARNING FOR PLANNING AND INVENTORY MANAGEMENT

January 2023 - December 2023

- **Inventory demand forecasting:** Built models that take data from multiple sources of differing modalities, and generate improved forecasts and order quantities. Explored various time-series models ranging from classical methods like ARIMA to deep architectures like transformers. My tool has since been tested for over a year, used to order inventory worth over **\$800M**, and productionalized into a web application.
- **Retrieval-augmented generation (RAG):** Developed a unifying interface for incorporating fine-tuned language models using Llamaindex to interact with the internal data. These include: enabling text-to-SQL queries directly on internal databases with language models and retrieval-augmented generation (RAG) for extracting factual information from document databases.
- **Metrics and QA:** Defined key metrics that served as heuristics, allowing us to measure supplier performance, and developed new data pipelines to capture new and existing key performance indicators (KPIs). Developed unit tests for QA that helped discover several data discrepancies and shortcomings in the legacy in-house inventory tool causing over-ordering and leading to deadstock.
- **Automated data cleaning:** Implemented automated data cleaning and validation algorithms to enable for replenishment of **8500 high-velocity products** with forecasted sales of over **\$300M** over the next 12 months.

SENIOR DATA ANALYST, RETURNS MONETIZATION CHANNEL GROWTH

August 2022 - January 2023

- **Regression models:** Used regression models on historical data to evaluate the most profitable product categories to sell at the pilot of Wayfair's returned inventory outlet store; developed procurement and merchandising strategies to maximize profit, and built standardized reporting to track performance of the outlet store. The store achieved profitability within 3 months of opening with projected **\$500K** annual profit operating only one day/week and the outlet chain has been expanded to two more locations in the US and is being tested in the EU.
- **Software tools:** Developed an internal tool using excel and GBQ to generate details like description and list price of any returned product to be sold at Wayfair's outlet store and used API connectors to integrated data pipelines to and from the third-party point of sale system.

SENIOR DATA ANALYST, PARTNER OPERATIONS FOR SPECIALTY RETAIL BRANDS

March 2022 - August 2022

- **Databases:** Created new product and supplier databases for Specialty Retail Brands, Flagship Brands, and Physical Retail.
- **Visualization:** Developed and maintained long-term reporting for All Modern, Joss and Main, Birch Lane, and Wayfair's physical retail business in the form of KPI reports and dashboards; created a query database by writing custom SQL queries based on business requirements.

Avant LLC | Planning algorithms, Online Learning, Software Engineering

Chicago, IL

SENIOR ANALYST, PRODUCT AND DATA

January 2022 - February 2022

- Developed a tool that converts historical data for process flow in customer-company interaction into weighted graphs and provides insights on the most important paths for conversion to self-service using planning techniques like Dijkstra's and A-star; managed the build, testing, and deployment of APIs with the development team to facilitate automated capabilities like 'Text-to-Pay' and 'Schedule Callbacks' within the Interactive Voice Response system, SMS, and mobile application, saving the company **\$150K** per year.

ANALYST, OPERATIONS STRATEGY

December 2020 - December 2021

- **Automate agent scheduling for customer interactions:** Proposed and developed online learning strategies like Upper-Confidence Bound (UCB) to automate agent-customer interaction and provably reduce customer regret and facilitate even load distribution.
- **Livexox SMS and dialing campaigns implementation:** Deployed LiveVox, a collections communications platform, to replace a disparate infrastructure of in-house and third-party applications that managed outbound dialing, email, and SMS leading to estimated savings of **\$100K** a year. Scripted python jobs for auto-migrating customer communication data from Livevox to Avant's CRM; deployed monitoring and testing for customer communication campaigns.

Runaway | Application Development, Startup

Champaign, IL

TECHNICAL PRODUCT MANAGER

June 2020 - December 2020

- Created the product road-map and led the development and launch of a mobile application and a web application in the mental health space. **Product Demo**
- Managed a team of 12 engineers and designers; conducted weekly agile sprints including writing epics based on user stories.

Illinois Business Consulting | *Regression, Forecasting models*

New York, NY

TECHNICAL CONSULTANT FOR ALDI

January 2020 - May 2020

- Improved logistics services to reduce labor costs by standardizing pellet delivery throughout the week using regression models to find the best delivery days for stores by region.
- Created a database-connected-google sheets tool that will automate the process of identifying the most efficient delivery operation based on dynamically changing data from stores located globally.

Phi Optics | *Computer Vision, Startup*

Champaign, IL

TECHNICAL MANAGER (PART-TIME)

January 2020 - May 2020

- Led a team of 4 in developing computer vision techniques for live cell imaging. We focused on curating datasets and building upon methods like YOLO for detection and Mask-RCNN for segmentation.

Bhabha Atomic Research Center | *Multimodal Machine Learning*

Mumbai, India

RESEARCH INTERN

June 2018 - September 2018

- Worked under lead Scientific Officer, Parag Walinjkar, to predict the impact of radiation on surroundings depending on environmental factors. The data sources varied from readings from specialized instruments to weather readings. The project resulted in eliminating the need for analog and manual analysis.

RR Kabel Limited | *Time Series Modelling*

Silvassa, India

ANALYST INTERN

March 2018 - May 2018

- Designed a time-series model to keep track of key Quality Assurance parameters in wire and cable manufacturing as a function of past and present demand, historical raw material quality characterizations, and human workforce.

Siemens Limited | *Data Visualization*

Mumbai, India

SOFTWARE INTERN

June 2017 - August 2017

- Created a Tableau dashboard that tracked the required cycle time vs current production rate for circuit breakers, employee distribution on the assembly line, and status of defective appliances, raw materials, and missing orders, increasing the production rate by 3%.

Teaching Experience

University of Illinois Urbana-Champaign

Urbana, IL

TEACHING AND GRADING ASSISTANT

January 2020 - December 2020

- Assisted in teaching, mentoring, assessment, and grading activities for undergraduate courses BADM 312 (Designing and Managing Organizations), BADM 329 (New Product Development), and BADM 365 (New Product Marketing) and graduate courses BADM 508 (Leadership and Teams), MBA 551 (Strategic Innovation), BIOE 573 (Managing Business Operations), BADM 525 (New Product Development).

Projects & Volunteering

GSCMI Conference held at Purdue University

November 2019 - December 2019

- Selected to represent UIUC at the Global Supply Chain Management Initiative (GSCMI) Case Competition to develop a strategy to transform a company's global supply chain to accommodate changing production and transportation costs and exchange rates while maintaining steady sales.

British Petroleum Professional Responsibility Strategy Competition held at UIUC | First Runner Up

September 2019 - October 2019

- Invited to BP's Chicago office to identify and discuss the economic and energy challenges in Colombia in an interdisciplinary team of three.
- Scraped data from web on energy usage and carbon dioxide emissions from various companies. Learned an inverse model attributing importance to features using Shapley values.
- Presented data-backed insights and strategy on transforming the business to optimize for these quantities within practical constraints.

Automatic Traffic Control using Computer Vision | Bachelor Thesis

May 2018 - May 2019

- Worked on a project to address vehicular traffic problems in Mumbai by devising an effective system using data collected from 11 traffic signal cameras and applying object detection and tracking techniques to identify traffic patterns.

Rubik's Cube Mumbai Open (RCMO), RCMO Head

Mumbai

- Led a team of 50+ students to conduct an international cubing competition, build several cube-arts, and organize two workshops with over 60 participants.

Certificates & Skill

- **Machine Learning Coursework:** Reinforcement Learning (UAlberta Coursera), CS231n: CNN for Visual Recognition, CS229: Machine Learning (Stanford), Statistics: Fundamentals of Statistic (MITx), CS188: Intro to AI (UC Berkeley)
- **Fundamental Coursework:** Programming Languages and Paradigms, Intro to Computer Science, Python Data Structures and Algorithms (U Mich), Linear Algebra, Discrete Structures, Calculus III, Analytics I: Principles & Applications, Math Foundations for Data Analysis, Exploratory Data Analysis, Natural Language Processing (ongoing), Programming Using Python (MITx), Numerical Methods, Optimization Techniques, Microprocessor & Microcontroller, Signals & Systems, Digital Signal Processing
- **Frameworks:** Pytorch, LlamaIndex, greykite, Keras, AWS, Github, Numpy, Scikit-learn, Pandas, Looker, Google Data Studio, Tableau, OpenCV, Airflow, Power BI, Jira, Trello
- **Languages:** Python, R, SQL, C++, Java, HTML, CSS