Shreya Gupta

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EXPERIENCE

Applied Research Scientist II *eBay, Search Science & Monetization*　　　　　　　　*Jan 2022- Present*
Applied Research Scientist I *eBay, Search Science & Monetization*　　　　　　　　*Apr 2021- Jan 2022*

- Leadership
  - Tech lead, leading a team of 4 to deliver the most impactful tests & launches of 2024 & 25 lifting GMB by >1% each year.
  - On-boarded and mentored 3 new applied researchers and 1 engineer to the project I had been working on for over a year.
  - Drove consistent team & stakeholder alignment & progress on the engineering, machine learning, testing and product fronts with effective cross-team collaboration, actively recognizing and eliminating blockers, and seeking/driving regular alignment.
- Designed & Developed
  - Conceived, developed & deployed LLM & machine learning models for predicting relevance of retrieved items.
  - Designed, built & deployed reinforcement learning based bespoke relevance constraints to remove low relevance items.
  - AB tested all of the above technologies with iterative improvements and presented analysis & reports to tech stakeholders & VP.
  - Created & presented detailed project plans, designs and findings Senior VP, Directors and partner teams on a regular basis.
- Awards:
  - SPOT Award Q4 2024 for leading a multi-quarter complex product launch contributing to major GMB gains.
  - SPOT Award Recognized for exceptional contribution in diagnosing & resolving a mission-critical production bug.
- Publications & Articles
  - Patent on relevance modeling in Search. Two papers are in the submission process.

Machine Learning Research Scientist *SparkCognition*　　　　　　　　*Mar 2019- Mar 2021*

- Leadership
  - Spearheaded changing an unsystematic code development process by implementing the Agile process from scratch resulting in faster democratic product development and on-time releases (released 2 major versions).
  - Drove alignment in product vision between stakeholders (VPs, CTO, CSO) by revamping the prioritization strategy that enabled us to shortlist 4 out of ~30 research ideas and form a cohesive product outlook for 2021.
  - Roadmapped a strategy (accepted by CTO) to achieve the 2021 product vision. Delivered 4 research projects in 2020 Q2 and Q3.
  - Reduced on-boarding time for Data Scientists from 90 days to 10 days by initiating & leading an effort with my team to create on-boarding videos & documents (now also used by other teams). Also introduced a mentor-mentee setup for faster ramp up.
- Designed & Developed
  - Saved > $5M and filed 2 patents for two clients with a transfer learning solution for early anomaly detection & triage.
  - Built & deployed explainable ML & normal behavior deep learning models for high dimensional (10e5) streaming data (>32GB).
  - Worked on MVP with Staff Data Scientists, Product Leadership and UX designers. Derived insights from internal product development and feature requests from sales and customer support.
  - Collaborated with Chief Software Architect on system design for above MVP & automating product's model validation.
  - Proposed four Machine Learning Solutions & flow of micro-services to CTO & VPs to facilitate decision making for a partnership.
- Publications & Articles
  - Documented end-to-end product lifecycle, DAGs, several algorithms, and system designs for data ingestion and deployment.
  - Two Patents & Published two ML blogs on LinkedIn and co-authoring papers on novel feature importance methods.

Data Science Intern

- *SparkCognition, Austin, Texas*　　　　　　　　*May 2018 – Aug 2018*
  - Researched transfer learning methodologies for anomaly detection & classification to transfer models across IoT assets .
  - Market research for a new product line applying technologies to healthcare. Presented findings to CTO & other leadership.
- *SparkCognition, Austin, Texas*　　　　　　　　*May 2017 – Aug 2017*
  - Deep learning, machine learning, time series models, and dimensionality reduction for IoT data with 10e5 features.

Graduate Research Assistant

- *Dell Children's Medical Center & The University of Texas at Austin*　　　　　　　　*July 2016 – May 2019*
  - Modeling the treatment for epilepsy using robust Markov decision processes and robust optimization.

- *Samsung Semiconductors & The University of Texas at Austin*　　　　　　　　*Jan 2014 – Jan 2017*
  - Proposed count regression based ranking algorithms & AMHS routing algorithms that reduced cycle time by $\approx 40\%$.

TECHNICAL SKILLS

Modeling & Coding: Agentic modeling using LLMs (openAI, Anthropic, open source huggingface), Deep Learning, Machine Learning, Python

Big Data: SQL, Scala, Spark, Hadoop　　**LLM & Agentic Modeling:** https://github.com/shreyagupta/deep-llm-engineering

EDUCATION

PhD, Operations Research & Industrial Engineering, *The University of Texas at Austin*　　　　　　　　*May 2019*
Focus: Markov Decision Process modeling for Healthcare & Statistical Methods for analytics in Semiconductor Industries

Portfolio in Applied Statistics, *The University of Texas at Austin* *Dec 2017*
MS, Operations Research, *University of Delhi, India* *May 2014*
BS, Mathematics (Honors), *University of Delhi, India* *Jun 2012*

NOTABLE AWARDS & ACTIVITIES

Leadership: National INFORMS Volunteer Service Award for exceptional service as Student Chapter President *Apr 2016 – Apr 2017*

Public Speaking: Led a deep learning study group and gave talks to ≈30 people at "Austin Big Data AI" meetup *May 2018 – Oct 2018*

Scholastic Award: Student excellence scholarship for academic & extracurricular excellence BS Mathematics *Jul 2011 – May 2012*