Contact

shreya.official@gmail.com

www.linkedin.com/in/shreya-gupta (LinkedIn)

Top Skills

Scala
Statistics
Analytics

Languages

Hindi
Spanish (Elementary)
English

Honors-Awards

Geeta Memorial Scholarship
Volunteer Service Award
INFORMS Student Chapter Annual Award Magna Cum Laude

Shreya Gupta, PhD

Agentic AI | LLMs | Machine Learning | Tech Lead | Search | eBay | PhD UT Austin
San Francisco Bay Area

Summary

Agentic AI repo: https://github.com/shreyagupta/agentic-llm-engineering

I've worked in AI for the last 7 years with technology ranging from classical ML, deep learning, to most recently agentic AI. I have over 4 years of experience as a tech lead (across two companies) leading and delivering on complex high stakes projects involving partnerships across teams and executives. I shine in environments that are vague yet fast paced and technical; and things just need to get done! If you think that's someone you want, shoot me a message and we can hop on a call.

Experience

eBay
4 years 7 months

Applied Researcher II (Staff)
February 2022 - Present (3 years 9 months)
San Francisco Bay Area

Building and deploying end-to-end relevance models for eBay Search, leveraging LLMs, deep learning, and classical ML to enhance ranking quality and user engagement.

Focus areas: Natural Language Processing · Machine Learning · Deep Learning · A/B Testing

Tech Stack: Python, Scala, Hadoop, SQL

Patent in Search Relevance Modeling. Two Papers are in submission process.

Applied Researcher I
April 2021 - February 2022 (11 months)
San Jose, California, United States

Building machine learning and deep learning based relevance models to improve the retrieval models in the Search Science Team

SparkCognition
Data Scientist III (Machine Learning Researcher)
January 2019 - April 2021 (2 years 4 months)

Designed & Developed

• Saved > $5M and filed 2 patents for two clients with a transfer learning solution for early anomaly detection & triage
• Built explainable ML & normal behavior deep learning algorithms for high dimensional (10e5) streaming time series data (>32GB)
• Worked on MVP with Staff Data Scientists, Product Leadership and UX designers. Prioritized resources for MVP's feature requests with 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.

Leadership

• Product Owner for SparkPredict
• Guided 4 research projects to completion by prioritizing experiments of the research team with product requirements
• 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.
• 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)
• 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.
• Drove a diversity recruitment campaign to increase representation in Data Science and Software Engineering teams

Publications & Articles

• Two Patents in Anomaly Detection
• Documented end-to-end product lifecycle, DAGs, several algorithms, and system designs for data ingestion and deployment
• Published two ML blogs on LinkedIn and co-authoring papers on novel feature importance methods

The University of Texas at Austin
4 years 6 months

Graduate Research Assistant
August 2016 - February 2019 (2 years 7 months)
Austin, Texas Area

• Employing machine learning, Markov decision processes and stochastic optimization to model treatment for epilepsy patients with Dr. John Hasenbein and Dr. Dave Clark
• Simulate the real patient-doctor interaction scenario while a patient is suffering from epilepsy
• Eliminate bottlenecks causing delay in efficient and effective treatment
• Quantify benefit to be maximized for the patient as epilepsy specific quality adjusted life years (QALYs)

Assistant Instructor for Simulation with ARENA
January 2017 - May 2017 (5 months)
Austin, Texas Area

• Responsible for teaching Simulation using ARENA, an upper/senior level undergraduate course, to ~30 students
• Developed the syllabus keeping in mind the required pace for the class and presupposing the time I would require to teach the various concepts
• Innovated unique pedagogy techniques to make the classroom environment light and to make myself approachable
• Designed exams and homework regularly in a way that motivated and helped students grasp the concepts being taught
• Held office hours to discuss advanced topics and assist students with queries
• Improvised the pace and pedagogy based on periodic feedback

Graduate Research Assistant
January 2016 - January 2017 (1 year 1 month)
Austin, Texas Area

• Designed statistical algorithm in R to rank tools via categorical regression (ANOVA, ANCOVA) & pair-wise difference tests
• Developed algorithms (R & Python) for statistically scoring and ranking routes from best to worst using count regression

• Experimented with and compared the rank correlations of the various ranking and scoring algorithms (using R & Python)
• Presented at INFORMS US Annual Meet 2016 - Nashville, USA
• Presented at the Industry Open House Held by the Graduate Program in Operations Research and Industrial Engineering at The University of Texas at Austin in April 2017
• Presented at the Graduate Poster Competition at The University of Texas at Austin in January 2017

Graduate Research Assistant
January 2015 - January 2016 (1 year 1 month)
Austin, Texas Area

• Developed routing algorithms for Automated Material Handling System (AMHS) vehicles which can potentially reduce the wafer fabrication cycle time by ≈15%
• Built a simulation engine in Python to implement and experiment the multiple AMHS routing algorithms. This involved building a blueprint of the fab route network in python.
• Tested these routing algorithms by running multiple simulations and using design of experiments
• Interacted with teams and engineers from Korea and Japan
• Paper to go into a journal publication soon.
• Presented at Amazon Graduate Research Symposium (Dec 2015)
• Presented at INFORMS Annual Meeting (Nov 2015, Nov 2016)

Graduate Teaching Assistant (Certified)
September 2014 - December 2014 (4 months)
Austin, Texas Area

• Grad Course: Applied Probability (~25 students), Graduate Program in Operations Research and Industrial Engineering - Sep'14 - Dec'14
• Grad Course: Linear Programming (~50 students), Graduate Program in Operations Research and Industrial Engineering - Aug'18 - Dec'18
• Grad Course: Analytical Methods (~30 students), Department of Aerospace Engineering - Sep'14 - Dec'14

• Undergrad Course: Statistical Methods (~100 students), Department of Statistics and Machine Learning - Jan'18 - May'18
• Undergrad Course: Engineering Finance (~125 students), Department of Mechanical Engineering - Aug'18 - Dec'18
• Undergrad Course: Engineering Communication (~100 students), Department of Mechanical Engineering - Aug'17 - Dec'17

• Certified Teaching Assistant by the Cockrell School of Engineering, University of Texas - Austin
• Assist in instructional responsibilities for two graduate level courses at the Cockrell School of Engineering
• Design tutorials, home works, activities to supplement student learning
• Tutor, proctor tests/exams, hold office hours and grade problems sets
• Mentor students for future academic steps, career growth and personal issues

SparkCognition
Data Science Intern
May 2018 - August 2018 (4 months)
Austin, Texas

• Transfer Learning, deep learning; classification, regression and anomaly detection for IoT
• Market research for new product line and presented findings to C-suite; lead them to seriously consider product line

SparkCognition
Data Science Intern
May 2017 - August 2017 (4 months)
Austin, Texas

• Employed machine learning and deep learning techniques to reduce the dimensions of and build predictive algorithms for a healthcare dataset with 10e5 features
• Time Series visualization and feature creation using Symbolic Aggregate approXimation (SAX) and dynamic time warping (DTW) techniques to improve anomaly detection and prediction quality for models that use time series data
• Presented findings and developments to the entire Data Science team including the Director and VP of Engineering

Itiee Kritee
Strategy & Pricing Intern
October 2013 - May 2015 (1 year 8 months)
Jabalpur Area, India

*(Itiee Kritee is a handloom startup that deals in handcrafted and handwoven apparel)

• Strategized firm's 5 year start-up business model to maximize profit under stochastic constraints over net present value. The firm is in fact implementing the recommended strategy.
• Achieved ≈20% increase in revenue by revising pricing policy based on qualitative & quantitative findings via market research
• Improved the firm's social media and marketing strategy and benchmarked it against competitors, thus bringing in customers from Malaysia and Germany
• Assisted the marketing team in strengthening the brand and improving website functionality

Jamna Auto Industries
Inventory Control Intern Inc.
January 2014 - April 2014 (4 months)
New Delhi, India

*(Jamna Industries is the 2nd largest manufacturer of automotive springs globally)

• Designed and developed an inventory control model that minimized part shortages while improving service level
• Reduced inventory carrying costs by calculating optimal SKU order quantity
• Evaluated factory capacity & demand forecast constraints as part of the optimization models
• Communicated findings and output analysis to executive management and factory manager

Genpact
Analytics Intern
June 2013 - July 2013 (2 months)
Phase 5, DLF, Gurgaon, Haryana

*(GENPACT, a former business unit within GE, is a multinational Outsourcing & IT services company)

• Employed advanced analytical methods to quantify factors such as region, client, verticals that influence Business Impact
• Prepared the bi-annual Net Promoter Score (NPS) Report
• Analyzed the correlation between NPS and Business Impact
• Actively participated in GENPACT's Six Sigma Black Belt Training Program (Analyze Phase)
• Conducted multiple interviews with finance, procurement & manufacturing teams to understand business processes

Education

The University of Texas at Austin

PhD, Operations Research & Industrial Engineering · (2014 - 2019)

Hindu College, University of Delhi

MS, Operations Research · (2012 - 2014)

Jesus and Mary College, University of Delhi

BS, Honors, Mathematics · (2009 - 2012)