

# Hasan Khan

ML Engineer

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## Work

### ML Engineer – Healthcare Risk Advisors

5/2023–Current

Building agentic retrieval augmented generation (RAG) systems for medical claims. Tuned, evaluated and deployed a RAG chatbot that saves 300 hours per month of information retrieval and form filling for a 30-person claims team. Designing and implementing predictive models for claims processes.

### Data Scientist – LMI

8/2018–5/2021

Built analytics and machine learning consulting services for U.S federal agencies. Highlighted projects:

Inventory Management – Built supervised regression models to optimize rare inventory lead time estimation for the Defense Logistics Agency. Random forests trained on 10+ years of inventory procurement data resulted in a 37% improvement in lead time predictions for rare procurements over baseline metrics, with an annual savings of \$45M on inventory holding costs.

Survey Analytics – Designed and developed a survey analytics web application for NASA Human Resources. Utilized BERT models for sentiment analysis and topic modeling on free response survey comments. Deployed application using Python Dash on Shiny.

## Research

### Improving Knowledge Distillation – Computational Linguistics, NYU

1/2023–5/2023

Research on improving the efficacy of Knowledge Distillation in LLMs by incorporating novel curriculum learning methods, where student models selectively rely on teacher distillation loss depending on datapoint difficulty. Conducted as part of a Computational Linguistics course semester project.

### Neuronal Modeling – Meliza Lab, UVA

5/2016–5/2018

Modeled neurons in Python to simulate auditory cognition in Zebra Finches. Coded Recursive Bayesian Filters for biophysical parameter estimation. Classified auditory neurons into subtypes based on ion channel makeup.

## Education

### MS in Computer Science – New York University – 3.4 GPA

8/2021–5/2023

### BA in Computer Science – University of Virginia – 3.3 GPA

8/2014–5/2018

### BA in Cognitive Science – University of Virginia – 3.3 GPA

8/2014–5/2018

## Proficiencies

Languages: Python, Java, C++, SQL, HTML, Ada

Libraries: LangChain, LangGraph, Transformers, Sklearn, PyTorch, MLflow, SparkNLP

Platforms: Databricks, Azure, Git, Docker

Certifications: Databricks Generative AI Engineer Associate

Clearances: US Federal – Secret