

SUMMARY

Software Engineer/ML Engineer with over 3 years of experience in machine learning, deep learning, and generative AI. Proven track record of developing and deploying evaluation platforms and tooling for ML solutions that enhance user experiences. Known for improving system performance by integrating sophisticated AI models and leading cross-functional teams to success.

EXPERIENCE

GrantAlde (Summer Internship)

San Francisco, California

Software (ML/AI) Engineer

Jun 2024 – Aug 2024

- **Researched and implemented** a Multi Modal multi tenancy Retrieval-Augmented Generation (RAG) pipeline from scratch, developing and deploying a **grant writing tool on AWS Elastic Beanstalk** using **Python and Flask**, which **accelerated project completion by 40%**.
- **Performed data analysis** to improve information retrieval and text generation, **identifying trends and summary statistics** using LangChain, FAISS, Google Cloud Storage, Firestore, and Cloud Functions, achieving a **20% improvement in retrieval accuracy**.
- **Reduced Large Language Model hallucination by 14%** and achieved **90% accuracy in text generation** by integrating **GPT-4 and Google's Gemini Pro** into the RAG pipeline, enhancing reliability for grant writing.
- **Managed project deliverables** by leading a team of 3 engineers, overseeing **project scope, timelines, and code quality** through Git-based CI/CD, reducing deployment time by 40%.
- **Presented analysis outcomes and performance improvements** to internal stakeholders, reduced latency of API calls to improve **response times by 50%** using deque for backend processing, which directly impacted user experience positively.

Siemens Healthineers Pvt. Ltd.

Bengaluru, India

Software Engineer

Jan 2022 – Jul 2023

- **Developed and implemented** key features for **Siemens' CT visualization software** using **C# and .NET**, consistently meeting **project goals and deadlines** in a cross-functional team environment.
- Conducted **data analysis** to monitor software effectiveness and **troubleshooted technical issues** identified through **unit and feature testing** integrated into CI/CD with nightly build reviews, which improved issue detection by 21%.
- **Collaborated with senior engineers and product managers** (avg. 6+ years experience) and engaged in **sprint planning, reviews, and root cause analysis sessions**, showcasing **analytical findings and code enhancements** to optimize the clinical usability of the software.
- Enhanced **test coverage by 15%** through additional tests, improving analysis accuracy and error detection, which led to more reliable diagnostics in live CT machine environments.

RESEARCH ACTIVITIES & LEADERSHIP

University of Rochester

Rochester, New York

Research Assistant

Sept 2024 - Present

- Developing innovative approaches with **Diffusion Models** to solve differential calculus problems, advancing methodologies for complex problem-solving in applied mathematics and computational research.

University of Rochester Medical Center

Rochester, New York

Graduate Research Assistant

Mar 2024 – Present

- **Conducted large-scale data analysis** on the Palantir platform with **Spark and Python**, uncovering insights on long COVID's impact on mortality, and summarized findings in reports aimed at influencing **NIH policy**.
- Applied **data manipulation, descriptive statistics, and inferential techniques** to identify trends, and **performed geospatial analysis** with reverse geocoding to support NIH's data initiatives.
- **Mentored undergraduate researchers**, enhancing team productivity through **code reviews and debugging sessions**, improving the overall quality of the project deliverables.

DATA SCIENCE COURSE PROJECTS

Data Science Capstone Project : Understand and monitor public perception and use of different tobacco/nicotine substances

Aug 2024 - Present

- Designed and implemented a **Python-based data pipeline** with Playwright for data extraction from Twitter, using **BERT and LDA topic modeling** to analyze public perceptions on vaping and e-cigarette use, aiding in **stakeholder-informed decision-making**.
- **Fine-tuned BERTweet** for sentiment analysis on public discourse regarding e-cigarettes, achieving **87% F1 score** for sentiment classification, providing insights for public health stakeholders.
- Fine-tuned multiple machine translation models, including facebook/mbart-large-50-many-to-one-mmt, google/MADLAD 3B, and Helsinki-NLP/opus-mt-es-en from Hugging Face, to enhance translation accuracy and adaptability across languages.

Prediction of Biological age using 3DCNN Model for Cognitive Impairment

Mar 2024 – Mar 2024

- Replicated and enhanced a 3D CNN model based on anatomically interpretable deep learning techniques to predict brain age in cognitive impairment, improving model interpretability for clinical applications.

Study Of Applicants Applying for master's and PhD Program at University of Rochester

Nov 2023 – Dec 2023

- Analyzed University of Rochester's application data, identifying acceptance patterns and key factors through descriptive, inferential, regression analyses, and hypothesis testing.
- **Feature Engineering:** Developed and engineered features from raw data to enhance model accuracy and predictive power.
- **Modeling:** Built and validated predictive models to forecast acceptance probabilities, improving the decision-making process for admissions.

ADDITIONAL PROJECTS

ChatWithMe: Personal Website and Resume Chatbot (~50 hours) ([Link to Personal Website](#))

Sep 2024 – Sep 2024

- Built and deployed an interactive personal website using Next.js, HTML, and CSS, hosted on Vercel, to showcase projects and experience, enhancing user engagement through responsive design and dynamic features.
- Developed a resume-focused interactive chatbot using a Retrieval-Augmented Generation (RAG) pipeline to answer user questions in real time, improving accessibility to my professional profile.
- Streamlined deployment by integrating the frontend on Vercel and backend on Koyeb, implementing automated continuous deployment directly from GitHub.

Covid-19 CT DICOM Image Segmentation

Apr 2024 – Apr 2024

- Segmented low-quality CT DICOM images to classify Ground Glass Opacities, Consolidations, and Lung areas, improving diagnostic accuracy for Covid-19 cases.
- Achieved 79% accuracy and 76% IoU with a U-Net model, later improving segmentation by 6% using a Hugging Face transformer and by 10% with a **Vision Transformer (UNET-R)**.
- Reduced training time by X% through patch shifting and cyclic shifts with a Swin Transformer, increasing efficiency for large-scale image segmentation tasks.
- Leveraged advanced deep learning techniques, including Vision Transformers and model optimizations, to enhance Covid-19 CT segmentation performance and reliability.

SKILLS

- Programming Languages: Python , SQL, Spark, R, C, C++, C#
- Data Science Techniques: Machine Learning, Deep Learning, NLP, Model Fine-Tuning, Image Segmentation, ML Model Deployment, Cloud Computing (AWS)
- Soft Skills: Leadership, Communication, Problem-Solving, Cross-Functional Collaboration, Time Management, Mentorship, Adaptability
- Data Analytics & Database Tools: SQL, Firebase, NumPy, Pandas, PySpark, Statistics, Data Analytics
- Frameworks and Libraries: Keras, PyTorch, TensorFlow, Sci-Kit Learn, GeoPandas

EDUCATION

University of Rochester

Rochester, New York

Master of Science, Data Science – Expected graduation Dec 2024

Aug 2023 – Dec 2024

- Merit Scholarship: Awarded a 40% merit-based tuition scholarship, the highest awarded to international students in the 2023 cohort.