Rishav Sapahia

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Profile

Senior Software Engineer professional with 4+ years of experience applying machine learning and deep learning techniques to healthcare-focused research and development. Completed a Master's in Data Science in December 2024 and now seeking to leverage advanced ML and LLM development skills in a corporate & research environment to drive innovative solutions and impactful business outcomes.

Education

2023/08 – 2024/12
Miami, United States
Masters in Computational Data Science - 3.97 GPA, *University of Miami*
Coursework - Computer Vision, NLP, Neural Networks, Deep Learning, Data Visualisation, Healthcare Informatics.

2014/04 – 2018/06
Shimla, India
Bachelor in Computer Science, *Jaypee University of Information Technology*
Coursework - Algorithms, Data Structures, Databases, Operating Systems, OOP, Software Engineering.

Professional Experience

2025/01 – present
Miami, United States
Researcher, *University of Miami*
- Initiated chatbots for mental health client/patient intake using **Natural Language Processing and Large Language Models (LLaMa, DeepSeek)**, focusing on user-friendly design and improved engagement.
- **Currently creating culturally aware comprehensive evaluation sets** to accurately gauge system performance and support ongoing improvements and testing the LLM performance on them.

2019/04 – 2023/07
Miami, United States
Research Associate, *Bascom Palmer Eye Institute*
- Designed and implemented **end-to-end ML pipelines** for the diagnosis of neuro-degenerative diseases, incorporating **software design best practices** and collaborating with Software Engineers to meet FDA regulatory requirements.
- Secured **$1M in funding** through research experiments aimed at developing trustworthy machine learning systems from **NIH and Bascom's internal grants**.
- Collaborated with Bascom's faculty to incubate a startup focused on **Parkinson's diagnostics**, successfully securing a seed grant from the Small Business Innovation Research (**SBIR**) program.
- Planned and executed the establishment of Bascom's first AI lab, by carefully researching and selecting the suitable **high end GPU** hardware boosting our AI capabilities.

2018/07 – 2019/03
Mumbai, India
Machine Learning Researcher, *IIT Bombay*
- Achieved a **6x speed-up** in computation by parallelizing the algorithms of hyper-spectral data from remote sensing satellites, responsible for data analysis and predictive modelling to find stress in agricultural crops.
- Developed and trained a state-of-the-art Named Entity Recognition (NER) model for low-resource Indic languages, improving the accuracy of information extraction by 60%

2018/04 – 2018/05
Patiala, India
Machine Learning Intern, *Thapar University*
- Designed an **end to end ML pipeline** from dataset generation(curated one of the first and largest known dataset of **Indian Sign Language~32k images**) to API building for Indian Sign Language and achieved the accuracy of 96%.

Skills

Languages, Tools and Libraries & Skills
Python, Pytorch, Keras, Tensorflow, NumPy, Pandas, Scikit-learn,C++, Java, Matplotlib, XGBoost, SQL,Parquet, R, Data Analysis, CI/CD, Microservices, SQL,Tableau, code reviews, user documentation, Software Development, test automation, Artificial Intelligence, Machine Learning, Analytics Data processing, Langchain, Statistics, NoSQL, A/B Testing, Unit Testing Frameworks, AI safety & Trustworthy ML practices,website development, web scraping, natural language processing, image recognition, Business Intelligence: BI .

Cloud Platforms, Deployment & Collaboration
AWS -S3, EC2, LambdaLabs, Microsoft Azure, Google Cloud Platform, Docker Kubernetes, Visual Studio Code, JupyterLab, Git, Jira.

Awards & Publications

- **ACM-ICPC 2017 India Finals Qualifier**, Ranked **Top-20** among **100+ teams of Indian subcontinent**.
- Sapahia R, Laurik-Feuerstein KL, Cabrera DeBuc D, Somfai GM (2022) **The assessment of fundus image quality labeling reliability among graders with different backgrounds**. PLOS ONE 17(7): e0271156. https://doi.org/10.1371/journal.pone.0271156
- Sapahia R, Acuña K , Jiménez IN, Antonietti M, Anzola I, Cruz M, García MT, Krishnan V, Leveille LA, Resch MD, et al. **Functional Near-Infrared Spectrometry as a Useful Diagnostic Tool for Understanding the Visual System: A Review. Journal of Clinical Medicine**. 2024; 13(1):282. https://doi.org/10.3390/jcm13010282
- **Kernel flow and the eye-brain connectome: Towards a more robust technique to identify high-risk individuals before cognitive decline** (2023). *Poster, First Published*: 16 June 2023.DeBuc, D.C., et al.
- **Kernel flow and the eye-brain connectome: Towards a more robust technique to identify high-risk individuals before cognitive decline** (2023). *Poster, First Published*: 16 June 2023.DeBuc, D.C., et al.
- **Laser speckle-based retinal imager as a potential screening tool for mild cognitive impairment** (2021).DeBuc, D.C., et al.
- **Investigating retinal blood flow characteristics and amyloid formation in patients with type 2 diabetes and mild cognitive impairment** (2020).DeBuc, D.C., Sapahia, R., et al.