SWAPN SHAH

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https://scholar.google.com/citations?hl=en&user=LVUZzS4AAAAJ

EDUCATION

The University of North Carolina at Charlotte, School of Data Science — Charlotte, NC
PhD in Data Science — Jan 2025 - Present

The University of North Carolina at Charlotte, College of Computing and Informatics — Charlotte, NC
Master of Science in Computer Science (Data Science Concentration) — Jan 2021 - May 2022

Gujarat Technological University — Ahmedabad, India
Bachelor of Engineering in Computer Engineering — Aug 2016 - May 2020

SKILLS

Programming: Python, C++, Java, SQL
Machine Learning & Deep Learning: TensorFlow, PyTorch, Keras, Scikit-learn, Hugging Face Transformers, CNN
Neural Networks & NLP: LSTM, Large Language Models, Text preprocessing, Fine-tuning BERT/llama
Data Science & Analytics: Pandas, NumPy, Matplotlib, Statistical analysis, A/B testing
Cloud & Tools: AWS, Azure AI Foundry, Docker, Git, Jupyter Notebooks

EXPERIENCE

University of North Carolina at Charlotte, *School of Data Science* Charlotte, NC

Graduate Teaching Assistant**,** *ITCS 3601 – Predictive Analytics* — Aug 2025 - Present

- Collaborated with faculty on updating instructional content to include emerging tools and best practices in AI and data science.
- Assisted students during lectures and practical sessions by helping with debugging code, providing step-by-step explanations, and clarifying course concepts in predictive analytics.
- Held office hours to address student questions, troubleshoot technical issues, and reinforce class material.

Graduate Research Assistant — May 2025 - Aug 2025

- Assisted in the design and development of a phishing awareness system, improving user training modules through data-driven insights and system usability testing.
- Conducted detailed analysis of user interaction data to detect behavioral patterns and uncover key vulnerabilities and security risks.
- Collaborated with interdisciplinary teams to implement and validate phishing detection algorithms and user education strategies.

Independent Study — Jan 2025 – May

- Conducted a comprehensive literature review and evaluation of state-of-the-art AI-powered chatbots focused on delivering scalable, personalized, and cost-effective mental health support.
- Examined intertwined technical and social dimensions of chatbot systems as techno-social entities, identifying critical gaps in their design, safety, and deployment for mental health care.
- Identified key research questions and future directions to advance chatbot effectiveness, user trust, and regulatory compliance in mental health applications.

Amazon — Sunnyvale, CA

Software Development Engineer — Jun 2022- Oct 2023

- Collaborated with amazon devices team and computer vision team to execute edge computing on Security Surveillance devices of Ring ecosystem and Onvif cameras.
- Developed RPC and RESTful APIs in C++ and Java using gRPC protocols to facilitate communication between ring cloud and computer vision library.
- Worked with applied scientists to incorporate computer vision algorithm in camera server component which performs image recognition on the device, enhancing the latency by 35% from the cloud.

University of North Carolina at Charlotte, *Dept. of Public Health Sciences* — Charlotte, NC

Graduate Research Assistant — Jun 2021 - May 2022

- Constructed machine learning models and analyzed public health data using regression analysis, paired t-tests, and feature importance evaluation. Supervised projects, authored research articles, and established data exploration, visualization, and ML modeling pipelines.
- Used EHR data to lead research on the interplay between genetic factors, social determinants of health, and lung cancer incidence in non-smokers. Utilized statistical analysis and A/B testing to predict therapy response and investigate the impact of gender, revealing valuable insights into non-smokers' lung cancer incidence.