

NIKET GUPTA

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EDUCATION

University of Houston

Aug 2023 – Dec 2025

Bachelor of Science in Computer Science

- Relevant Coursework: Database Systems, Deep Learning, Computer Networks, Cybersecurity, Data Structures & Algorithms, Software Engineering

Wharton County Junior College

Aug 2021 – May 2023

Associate of Science

- Completed core coursework in mathematics, physics, and introductory computer science before transferring to the University of Houston.

TECHNICAL SKILLS

- **Languages:** Python, Java, SQL, JavaScript, TypeScript, HTML/CSS
- **Frameworks & Libraries:** TensorFlow, PyTorch, React, Node.js, Scikit-learn, MediaPipe, DistilBERT (Hugging Face)
- **Databases:** MySQL, PostgreSQL, DynamoDB
- **Cloud & DevOps:** AWS (EC2, S3, Lambda), Docker, CI/CD, Git, Linux
- **AI/ML:** CNNs, NLP, Transformer Models, Computer Vision, Data Augmentation, Model Evaluation
- **Tools & Platforms:** Jupyter Notebook, VS Code, Jira, Agile/Scrum

CERTIFICATIONS

NVIDIA Deep Learning Fundamentals

Mar 2025

- Completed hands-on training in neural network architectures, model training, and GPU-accelerated deep learning workflows.

PROJECTS

Dual-Pipeline Lung Cancer Detection System

Aug 2025 – Dec 2025

Deep Learning | 3rd Place – UH HPE Data Science Institute Showcase

- Engineered a TensorFlow CNN-based classification system to detect and classify lung cancer across 15 distinct classes from a Kaggle medical imaging dataset of approximately 5,000–15,000 samples.
- Designed a dual-pipeline architecture with separate processing paths for CT scan images and clinical tabular data, merging outputs into a combined prediction layer for improved classification accuracy.
- Addressed class imbalance through data augmentation (rotation, flipping, zoom, cropping, brightness adjustments) and resolved noisy/low-quality images via standardized resizing and padding.
- Achieved approximately 81% validation accuracy, outperforming single-pipeline approaches; discovered that clinical data outperformed CT scans on certain visually ambiguous cancer subtypes.
- Normalized the clinical pipeline to 3NF, removed features with near-zero variance and high multicollinearity, and dropped rows with excessive missing values to preserve data integrity in a medical context.

Multilingual Fraud Detection Analysis

Aug 2025 – Dec 2025

Cybersecurity & NLP

- Conducted the first systematic analysis of language diversity in the DIFraud fraud detection dataset, revealing that non-English content is concentrated in SMS messages (9.05%) with statistically significant differences between deceptive and non-deceptive classes.
- Trained and benchmarked DistilBERT, Random Forest, and LinearSVC classifiers on multilingual fraud data; found that DistilBERT exhibited the largest performance drop (7.4% accuracy decrease) despite achieving the highest absolute performance.
- Developed a cross-validation framework using langdetect and spaCy that achieved 99.77% agreement, providing a reproducible methodology for language quality assessment in security datasets.
- Performed chi-square statistical tests to quantify language distribution differences and synthesized controlled multilingual datasets via machine translation for rigorous hypothesis testing.

Zoo Management Database System

Jan 2025 – May 2025

Database Systems (COSC 3380)

- Designed and implemented a comprehensive MySQL database system for zoo operations managing multiple managers, staff members, gift shop inventory, and a ticket booking system.
- Built a normalized schema (3NF) with efficient relational design supporting complex queries and reporting across interconnected tables.
- Implemented 2 database triggers to automate business logic and maintain data integrity.

AI-Powered Smart Mirror

Ongoing

Computer Vision | Personal Project

- Developing a smart mirror application using MediaPipe for hand tracking and pose detection, with Kinect depth sensing for person recognition and auto-wake functionality.
- Architecting a multi-GPU pipeline (GTX 1070 + GTX 1060) to dedicate separate cards for real-time computer vision processing and display rendering.
- Planning future integration of photo-to-3D garment conversion and weather-aware outfit recommendations via local AI inference.

WORK EXPERIENCE

ICode

Aug 2022 – May 2023

Coding Instructor for Children

- Taught coding concepts and programming fundamentals to students ages 5–12 using Scratch, Roblox Studio, and Minecraft mods.
- Developed lesson plans and curriculum aligned with state technology education standards for a classroom of up to 20 students.
- Communicated complex technical concepts to non-technical audiences, building strong presentation and mentorship skills.
- Guided students through project-based learning, fostering problem-solving skills and computational thinking from an early age.

IronEdge Group

Jun 2019 – Aug 2019

IT Intern

- Assisted with troubleshooting and resolved 10+ technical issues across computer systems and network infrastructure.
- Supported IT operations including system maintenance, hardware diagnostics, and end-user support.
- Gained hands-on experience with enterprise IT workflows, ticketing systems, and client-facing technical communication.

ADDITIONAL INFORMATION

- Open to nationwide relocation.
- Legally authorized to work in the United States without sponsorship.
- Personal home lab: Mac Mini M4 media server (Jellyfin), multi-OS development environment (macOS, Linux, Windows).
- Interests: AI/ML research, open-source development, system building and optimization.