

Neal Kapadia

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EDUCATION

The University of Texas at Dallas

Aug. 2023 – May 2027

B.S. Computer Engineering, Minor in Biology | GPA 3.881 | Academic Excellence Scholarship

Richardson, TX

EXPERIENCE

Gartner

May 2026 – Aug 2026

Software Engineering Intern, People Data Platforms Optimization

Irving, TX

- Built a **PySpark reconciliation pipeline on Databricks** pulling Workday API records into a bronze table and diffing them against the silver table, catching **302 employee and 2,860 position records** missing from reporting.
- Released it to production through a **change request with QA proofs and a rollback plan**, scheduled as an **Azure Data Factory** job emailing exception reports to HR Information Systems twice monthly.
- Architected a **company-wide data quality framework** across bronze, silver, and gold layers with **GPT-5.5-assisted rule generation**, SCD Type 2 rule lifecycle, and error/warning severity tiers, surfaced in a **Databricks SQL dashboard** the team still uses.

Laisuo Su Research Group, UT Dallas | github.com/NealKapadia/BatteryGen

Oct 2024 – Present

Undergraduate Researcher, BatteryGen: generative AI for battery electrolytes

Richardson, TX

- Independently built BatteryGen, a **42M-parameter conditional VAE** trained on 7.1M molecules in 16 hours on one RTX 3060, hitting **1.000 validity, 0.998 uniqueness, 0.995 novelty** against published baselines.
- Trained the paired prediction model on 575 zinc additives with molecular fingerprinting, RFE-CV column selection, Optuna tuning, and scaffold-grouped cross-validation, reaching R^2 **0.82** on target metric Coulombic efficiency.
- Closed the loop with a **multi-LLM reasoner, judge, and orchestrator** validating final candidates against a **retrieval-augmented** literature base, **advancing top additive NCNCc1cccn1 to experimental validation**.
- **First author**, *Discover Energy* **6**, 10 (2026) (doi.org/10.1007/s43937-025-00122-3); **SPUR Award**, UTD CS, 2025.

Priro Systems Inc.

Jun 2024 – Aug 2024

Software Engineering Intern, early-stage software startup

Plano, TX

- Built a document-processing pipeline extracting part specs from scanned oil-and-gas PDFs with **Amazon Textract and Claude 3.5 Sonnet**, using a **lightweight Llama model** to match parts to commodity codes.
- Loaded resolved parts to a stakeholder-facing CSV and PostgreSQL table through a Django application, cutting a **40-hour manual review to under one hour** of human verification.

PROJECTS

Synapse Responder | Co-Founder, EMT-B | *Node.js, GPT-5.5* | synapse-responder.vercel.app

Jan 2026 – Present

- Shipped a browser-based ambient scribe transcribing on-scene audio into a **live patient dashboard** and auto-drafting EMS Patient Care Reports, cutting **20 minutes of documentation per encounter**.
- Architected it without a backend or database so **PHI is never persisted**. **Semifinalist, 2026 Draper Pitch Competition**, top 6 of 118 teams.

Taro | *Next.js, Supabase (Postgres), Auth0, Kimi K3* | cookwithtaro.vercel.app

Jun 2026 – Present

- Built a **full-stack** social cooking platform generating recipes from natural-language prompts with **schema-constrained output** and retry handling, plus a social feed with remixing.

Dead Silence | *Unity, C#, Blender* | nealkapadia.itch.io/dead-silence

Jan 2026 – May 2026

- Shipped a stealth-survival FPS with a five-person team, building the **sound-driven zombie AI** where gunfire and movement emit noise events the blind horde tracks, plus respawns that re-seed the horde on valid NavMesh points near a fleeing player to keep pressure constant as the map opens up.

Custom 24-bit CPU | *Verilog, RTL simulation, synthesis* | edaplayground.com/x/6Se9

Jan 2026 – Apr 2026

- Designed a **custom 28-bit instruction encoding** and implemented its **11-state multi-cycle datapath** in Verilog: 8 instructions, a 16x24 register file, and Von Neumann memory over a 14-bit bus.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, SQL, C/C++, Java, C#, R, Verilog, MATLAB

Cloud & Data: Databricks, PySpark, Azure (ADF, ADLS, AI Foundry), AWS (S3, Textract), Cloudflare Workers, Docker, PostgreSQL, Supabase, Power BI, ETL/ELT, SCD Type 2

ML & AI: PyTorch, scikit-learn, gradient boosting (XGBoost, CatBoost), Optuna, SHAP, retrieval-augmented generation, LLMs (Claude, OpenAI, Gemini, Llama)

Frameworks & Tools: React, Next.js, Node.js, Django, Flask, GitHub Actions, pytest, Jira, Agile/Scrum