KARAN PRATAP SINGH

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EDUCATION

Georgia State University – Presidential Scholar (Full-Ride Merit Scholarship)
Bachelor of Science in Computer Science | GPA: 4.24 (Max 4.3) | Atlanta, GA

WORK EXPERIENCE

Undergraduate Research Assistant — Data Engineering Lab (DELab) ***Georgia State University*** ***January 2026 –Present***

- Supporting data preprocessing and exploratory analysis for graph mining and biomedical text projects through Python-based data cleaning pipelines.
- Conducted literature review of 30+ papers on public health signal detection, synthesizing key methodologies to inform experimental design for COVID-19 misinformation spread analysis.
- Gaining hands-on exposure to research workflows, including dataset curation, experimental setup, and evaluation of machine learning models.

Math Tutor/ Teaching Asistant– Georgia State University MILE Lab & Schoolhouse.world ***March 2025 – Present***

- Tutored 100+ students in Precalculus and SAT Math students through structured problem-solving sessions.
- Developed 15+ custom problem sets targeting common misconceptions in quadratic functions and trigonometry, reducing student error rates by 40% on practice assessments.

Independent Technical Writer – Medium & LinkedIn ***January 2023 – Present***

- Authored 50+ technical articles on AI, system design, and machine learning, reaching 2M+ readers and generating 100K+ engagements through analytical deep-dives and research synthesis.
- Focused on **analytical explanations and concept synthesis**, translating research papers and complex systems into clear, structured technical writing for a developer audience.

PROJECTS

Vertex A11y – Chrome Accessibility Extension (HackGT12 Emerging Track Winner)

- Developed a Chrome extension that identified 15+ types of ADA/WCAG accessibility violations across 500+ test pages, reducing manual audit time by 75% through automated HTML/CSS/JavaScript scanning.
- Integrated OpenAI API to generate compliance scores (A/AA/AAA ratings) for websites, enabling developers to prioritize fixes based on severity and achieve 40% faster remediation cycles.
- **Emerging Track Winner at Georgia Tech Hackathon** among 1,500+ participants.

Claim-Level Health Misinformation Detection (Deep Learning, NLP)

- Designed a claim-level verification pipeline to classify health claims as **supported, refuted, or insufficient evidence** using transformer-based models.
- Achieved 87% accuracy in classifying health claims as supported/refuted/insufficient by fine-tuning BERT/RoBERTa models on 10K+ labeled claims, outperforming classical ML baselines by 23%.
- Reduced false positive rate by 18% through systematic error analysis across 500+ misclassified examples, identifying ambiguity patterns and evidence sparsity as key failure modes.

Stockd - An AI-powered inventory management solution (NLP, JavaScript, Supabase (PostgreSQL))

- Designed and implemented a **machine learning forecasting pipeline** (time-series analysis with linear regression, seasonality adjustments, and trend detection) achieving **13% MAPE accuracy,** enabling more precise purchasing decisions and reducing food waste by **20–40%**.
- Engineered a **dynamic pricing engine and real-time analytics dashboard** integrating POS-style sales ingestion (CSV + API emulation) driving **10–15% peak-period revenue uplift** and improving overall profit margins.
- **Winner –UGAHacks 11**, recognized for developing an AI-powered inventory optimization and dynamic pricing platform focused on waste reduction and profit maximization.

TECHNICAL SKILLS

Programming Languages: Python, HTML, JavaScript, CSS, PostgreSQL
Tools & Libraries: NumPy, Pandas, scikit-learn, PyTorch, FastAPI, Linux, NLP