Vishnoi

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EDUCATION:

Ph.D. in Physics, Northwestern University	**| 2020 - 2026 | Chicago, IL**

Physics B.S. Honors + CS Minor, Temple University   **\| 2016 - 2020 \| Philadelphia, PA**
GPA: 3.84/4.00; Cum Laude; Murray Green Medal for Physics

EXPERIENCE:

Data Scientist, Northwestern University   **\| Jan 2022 - Present \| Chicago, IL**
Urban scaling laws in U.S. metropolitan areas
- Structured 50+ raw data reports from law agencies across the U.S. into analyzable data.
- Identified ~20% missing data + anomalies and provided robust statistical estimates.
- Visualized demographic trends geographically from 1980-2020 for 300+ U.S. cities and built clustering, regression, and time-series ML models to explain trends.
- Identified physical scaling laws using state-of-the-art Bayesian hierarchical regression models (2 publications pending review).

Data Scientist, Max Planck Institute for Demography   **\| June 2023 - Present \| Rostock, Germany**
Global academic migration and publication patterns
- Scraped 95M+ publications (1980 onwards) to extract demographic information on ~33M researchers.
- Built researcher career trajectories across organizations, fields, and countries uncovering major differences in migration networks and publication patterns.
- Built time-series and survival ML forecasts and estimated future scenarios of academic demographics.
- Collaborated internationally to develop databases, visualize results, and deliver written reports (first-author publication pending review).

Data Science Research Consultant, Northwestern University IT   **\| Aug 2023 - Present \| Chicago, IL**
- Led consultations advising 10+ research teams on data-based research projects.
- Designed statistical workshops with code walkthroughs delivered to 30+ researchers.
- Consults include python help, ML model selection, web scraping, general research design etc.

Machine Learning Intern, University of Amsterdam   **\| June 2024 \| Amsterdam, NL**
Tracking online political discourse
- Fine-tuned Llama model to categorize 500k tweets on prompts identifying political discourse.
- Shipped interpretable data metrics to the sociology team for research and decision-making.

Teaching Assistant, Northwestern University   **\| 18 *months* \| Chicago, IL**
- Led weekly discussions and held office hours to enable student success in advanced physics courses.
- Extremely positive student evaluations in all courses on communication and accessibility.

PROJECT: RAG Academic Assistant: Locally deployed a DeepSeek-R1 Streamlit application using Ollama to digest my research pdfs privately and boost my daily productivity.

SKILLS : Python, SQL, STAN

INTERSECT Bootcamp @ Princeton University: workshop in software dev- APIs, Git, Testing, CI/CD.