

Namrata Srivastava, PhD

Research Scientist | AI in Education | Learning Analytics | Human-Centered AI
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SUMMARY: Applied AI Research Scientist with 8+ years of experience developing machine learning models and data pipelines for complex behavioral datasets. Lead design and deployment of AI-enabled classroom technologies, including OpenAI GPT-4o-powered conversational agents and teacher-facing analytics dashboards used in K–12 settings. Expertise in LLM-integrated feedback systems, sequence modeling, multimodal data fusion (log, gaze, video), and large-scale digital assessment analytics. Strong publication record: 500+ citations | h-index: 14

SKILLS:

Programming & Tools: Python (pandas, scikit-learn, openai, Pinecone), R (tidyverse, TraMineR, pMineR, Shiny), Git, Flask, HTML5, JavaScript

Core Skills: Applied ML • LLM Integration (OpenAI API) • Prompt Engineering (CoT, HITL) • RAG Pipelines • Knowledge Base Construction • Learner Modeling • Multimodal Learning Analytics • Large-Scale Assessment Data Analysis (OECD PISA/PILA) • HCI Research • Experiment Design • Mixed-Methods Research

WORK EXPERIENCE:

Research Scientist (L5), Vanderbilt University, USA

June 2024 – Present

- **LLM-Powered Classroom Agents:** Designed and deployed OpenAI GPT-4o-based conversational agents integrated with rubric-driven evaluation pipelines to scaffold inquiry and AI ethics learning; built API-driven backend systems (Python, Flask) for LLM orchestration and adaptive feedback generation; implemented RAG-style retrieval pipelines to ground responses in curriculum-aligned content.
- **AI-Driven Teacher Analytics Platforms:** Developed NLP-based automated scoring system for open-ended student responses using structured prompts and rubric alignment; leveraging LLMs to generate contextually grounded summaries of students' thinking for teacher decision support.
- **Large-Scale Assessment Data Analysis:** Built temporal sequence models (Markov-based) to analyze digital assessment behaviors across large student cohorts; identified strategic inquiry patterns using differential sequence mining techniques.
- **Leadership & Mentorship:** Serving as Co-PI/Senior Personnel on federal-funded AI-in-Education projects; supervise PhD and Master's students; teach undergraduate Data Science course.
- **Publications:** 500+ citations • h-index: 14 • i10-index: 20. Published in AAAI, CHI, LAK, AIED, EDM, L@S, and journals including *Computers & Education*, *Computers & Education: AI*, *JCAL*, *BJET*, and *Journal of Learning Analytics*.

Research Fellow, Monash University, Australia

Sep 2020 – Oct 2023

- Built early-warning ML models (Random Forest, Logistic Regression) on 7M+ student enrollment records using Python scikit-learn.
- Designed curriculum analytics dashboard (R Shiny) enabling faculty-level program optimization.
- Conducted large-scale pathway modeling and statistical inference on institutional datasets.

Machine Learning Research Intern, Adobe Inc., USA (Remote)

Jul 2020 – Sep 2020

- Built a mobile web app (HTML5/JavaScript) generating three types of LLM-powered summaries (text, images, mind-maps) to reduce reading interruption effects; validated through controlled user studies and published at CHI-LBW.

EDUCATION

Ph.D. in Computer Science – University of Melbourne, Australia

2016 – 2021

M. Tech – Indian Institute of Information Technology, Allahabad (IIITA), India

2013 – 2015

AWARDS & HONORS

- Judge's Choice Awards, EdTechnical AIED Forecasting Competition **2026**
- Invited Speaker, Universidad Autónoma de Madrid, Spain **2025**
- LIVE Ignite Tech Grant, Vanderbilt University: AI ethics chatbot for middle-school students **2025**
- Emerging Scholar Award, Society for Learning Analytics Research (SoLAR) **2024**