

Jyotsna Ramanan

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Learning Analytics professional with a Master's in Computer Science and **10+ years of experience building end-to-end data and software solutions**, including 6+ years specializing in learning analytics in higher education. I engineer the design and evolution of learning analytics solutions that go beyond reporting by **modeling student behavior, defining meaningful metrics, and translating insights into actionable outcomes** for instructors, students, and academic leadership.

My work spans the full life-cycle of analytics: from **architecting high-volume data marts** and integrating LMS/SIS data, to **developing scalable dashboards and LTI-based tools used across thousands of courses**. I focus on ensuring analytics are not only technically robust, but also aligned with instructional needs and capable of **driving real-world interventions**.

My background in software engineering and automation informs my approach to building efficient, scalable systems, with earlier experience developing enterprise applications and AI-oriented prototypes.

EXPERIENCE

• Learning Analyst

September 2019-Present

University of Nebraska System

Lincoln, NE

- Design and deliver learning analytics solutions that translate LMS, SIS, and clickstream data into actionable insights for instructors, academic leaders, and administrators, enabling data-informed decisions at the course and program level
- Lead end-to-end development of learning analytics initiatives, from data integration and modeling to visualization, stakeholder engagement, and continuous improvement
- Architect and evolve **Course Insights**, a university-wide Learning Analytics LTI platform providing real-time, course-level analytics to instructors across 4,000+ courses, supporting scalable adoption of analytics across the system
- Model student learning behaviors and define key engagement and performance metrics, establishing frameworks that align data with learning outcomes and instructional needs
- Partner with faculty, academic leadership, and cross-functional teams to ensure analytics outputs are pedagogically meaningful and drive effective instructional interventions
- Build and optimize large-scale data pipelines integrating LMS, SIS, and clickstream data into robust, nightly-updated data marts; manage millions of records with cost-efficient query strategies
- Drive adoption of learning analytics solutions across departments by iterating on dashboards, incorporating stakeholder feedback, and refining outputs for usability and impact
- Collaborate with inter-institutional partners (e.g., BTAA, Unizin) to share data architecture approaches and advance learning analytics practices across institutions
- Present learning analytics research and innovations at national and system-wide conferences (EDUCAUSE, NU Symposium), including work requiring IRB approval for data use and dissemination
- Consistently recognized for high performance, receiving “Exceeds Expectations” rating during the evaluation term

February 2022-February 2023

- **Skills:-** Programming/ML: **Python, R, SQL**; Cloud/Data: **Google BigQuery, PostgreSQL, MS SQL Server, GitLab**; BI/Viz: **Tableau, Plotly, Seaborn, Matplotlib**; AI/LLM: **Ollama, OpenAI, Retrieval-Augmented Generation (RAG) Pipelines**; Statistical Analysis: **Descriptive, Probability, z-scores, hypothesis testing, ANOVA, Pearson correlation, linear regression**

• Software Engineer

April 2017-September 2019

Resource Pro LLC

Lincoln, NE

- Instrumental developer in multiple automation products that **streamlined high-volume core insurance processes** (onboarding, renewals, account management). The solutions drastically cut down on processing time and manual intervention by automating data capture and digitization of key manual workflows, leading to **substantial efficiency gains** for account managers and service representatives.
- Spearheaded R&D for AI-oriented prototypes (e.g., product recommender and chatbot) using Azure ML and Microsoft Cognitive Services to integrate machine learning into new business tools.
- **Collaborated extensively** with peers in overseas development team (Bangalore, India), bridging the gap effectively between US-based stakeholders and them, and vice-versa
- Mentored and provided technical guidance to a Junior UI Developer (from team in Bangalore, India)
- Implemented features in company's Salesforce environment using **APEX, SOQL** and **VisualForce** on Classic and Lightning environments
- Reported directly to the Vice President (VP) of Technology, maintaining high-level visibility for all development projects and ensuring streamlined communication between the technical team and executive leadership.
- **Skills:-** Technologies: **C#, ASP.NET MVC 5, MS SQL Server, HTML5, CSS3, Bootstrap, JavaScript, jQuery**; Tools: **BitBucket (Version Control), Atlassian (Sprint Management)**.

EDUCATION

- **Post-Baccalaureate (Part-time)**

Spring 2021, Spring-Summer 2024, Spring 2026

University of Nebraska-Lincoln

Enrolled and completed various graduate-level course offerings (such as Data Mining, Statistics, and other core CS subjects) related to my career with highest letter grade; while utilizing University's Employee Scholarship Program

- **MS in Computer Science**

Fall 2014-Fall 2016

University of Nebraska-Lincoln

GPA: **3.6**

Thesis: Testing the Independence Hypothesis of Accepted Mutations for Pairs of Amino Acids in Protein Sequences

RESEARCH PUBLICATIONS

- **Conference Paper**

J.Ramanan, P.Z.Revesz, *Mutations of Adjacent Amino Acid Pairs are not Always Independent*
INASE Conference, Crete Island, Greece, October 17-19, 2015

- **Journal Paper**

J.Ramanan, P.Z.Revesz, *Testing the independence hypothesis of accepted mutations of adjacent amino acids in protein sequences*
International Journal of Biology and Biomedical Engineering, 11, 170-179, 2017

CERTIFICATES

- **Lean Six Sigma-Yellow Belt**

February 11, 2019

- **Machine Learning by Stanford University on Coursera**

April 16, 2019

Last updated: Feb 05th, 2026