

SHALABH SINGH YADAV

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EDUCATION

Master of Data Science (Applied ML & Research Analytics)

University of Massachusetts, Dartmouth

GPA: 3.7

North Dartmouth, MA

Aug 2023 – Dec 2025

Relevant Coursework: Advanced Machine Learning, Mathematical Statistics, Database Design & Data Warehousing, Data Visualization, [Institutional Research](#)

Bachelor of Computer Science

Acropolis Technical Campus

GPA: 9.3/10

Indore, India

Aug 2019 – May 2023

RESEARCH & PROFESSIONAL EXPERIENCE

Research Assistant – Reinforcement Learning & Agentic AI Systems

University of Massachusetts Dartmouth

North Dartmouth, MA

Sep 2025 – Present

- Designed a **Gymnasium-compliant RL environment** modeling a real-world DevOps staged rollout problem, separating environment dynamics from learning algorithms.
- Refactored a tightly coupled RL system into a **plug-and-play architecture**, supporting custom and standard algorithms (Q-learning, deep RL, Stable-Baselines3).
- Defined standardized **state, action, reward, and termination interfaces** to enable reproducible experimentation and fair algorithm comparison.
- Built **agent-agnostic interaction loops** emphasizing autonomous decision-making and reward-driven optimization for agentic AI systems.

Research Assistant – Data Science & Model Automation (*Research Project*)

University of Massachusetts Dartmouth

North Dartmouth, MA

Apr 2025 – Aug 2025

- Built **reproducible data and modeling pipelines** in Python, transforming a GUI-based research tool into a scalable command-line workflow.
- Enabled systematic experimentation across **7 statistical models** and 40+ parameters using configuration-driven validation logic.
- Conducted controlled experiments to analyze **model behavior, convergence, and sensitivity**.
- Developed automated **research reporting and visualization** outputs to support interpretability and dissemination.

Software Developer – Applied Data Analytics (*Applied Project*)

R.S Traders

Indore, India

Jan 2021 – Mar 2023

- Built data pipelines and dashboards to convert raw operational data into structured analytical datasets.
- Applied statistical and predictive modeling to study demand, inventory movement, and operational patterns.
- Implemented data validation checks to improve analytical reliability and reproducibility.
- Collaborated with stakeholders to translate analytical findings into actionable insights.

PROJECTS

Customer Behavior Analysis (Applied Research) (*Project*)

Bellabeat

Boston, MA

Dec 2023 – Feb 2024

- Analyzed behavioral time-series data using **R** and statistical methods to identify engagement patterns.
- Quantified relationships between activity and health indicators (e.g., BMI) to support hypothesis-driven analysis.
- Delivered interpretable insights showing a **12% reduction in resting heart rate**.

SKILLS

- **Machine Learning & AI:** Reinforcement Learning, Agentic AI Systems, Deep RL Concepts, Supervised & Unsupervised Learning, Statistical Modeling, Optimization
- **ML Engineering & Experimentation:** Gymnasium Environments, Experiment Design, Model Evaluation, Reproducible Pipelines, Algorithm Benchmarking, Hyperparameter Analysis
- **Programming & Data:** Python, R, SQL, Pandas, NumPy, Scikit-learn, Matplotlib
- **Tooling & Visualization:** Git, CLI-based Workflows, Tableau, Power BI, Excel