Nitin Yadav

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Summary

Applied AI engineer and data scientist with a background in **deep learning, computer vision, NLP, statistical modelling, analytics, and engineering**. Strong track record in problem-solving, research, and delivering scalable, real-world solutions for **4+ years across academia and industry**, seeking roles that bridge rigorous methodology to solve business problems.

Education

- **M.S. in AI engineering**, Auburn University, Auburn, AL — *Jun 2025 – May 2026 (Expected)*
- **Graduate Certificate in Business Analytics**, Auburn University, Auburn, AL — *Aug 2024 – May 2025*
- **M.S. in Probability and Statistics**, Auburn University, Auburn, AL — *Aug 2022 – Dec 2023*
- **B.S. in Chemical Engineering, BITS Pilani**, Hyderabad, India — *Jul 2016 – May 2020*

Experience

Research Assistant, Harbert College of Business, Auburn, Alabama, USA — *Sep 2022 – May 2025*

- Examined the **causal impact** of GenAI adoption on Stack Overflow using **network science** and Diff-in-Diff.
- Documented long-run effects on user engagement, a 2.5× decrease in clustering and 3× increase in node death rate.
- Introduced the concept of Functional Form Misspecification (FFM) in **testing nonlinear hypotheses**, demonstrating how misspecified controls lead to biased and unreliable estimates in Operations Management.

Analytic Solutions Analyst, JP Morgan Chase, Mumbai, India — *Jun 2024 – Aug 2024*

- Performed **root-cause analysis, process engineering, and operational improvements** for the Equity Ops team.
- Achieved **self-solve mode** for SBL recon using **Alteryx automation** and reduced workload equivalent to 1.5 FTE.

Data Consultant, IRC, RBD Library, Auburn, Alabama, USA — *Aug 2022 – Dec 2023*

- **Automated extraction** of course data from university-wide LMS-CANVAS to develop a **web crawler** and **streamlined workload** estimation per course.
- Regularly consulted 3-5 graduate students and faculty on data analysis, specialising in **debugging R/Python scripts.**

Data Analyst, Project Manager, Fractal Analytics, Mumbai, India — *Jun 2020 – Jul 2022*

- Leveraged **Directed Acyclic Graphs (DAGs)** to model and **predict warehouse delivery** ETAs for P&G, improved scheduling accuracy by 15% using historical data.
- Led **20X project expansion** and scaled a cross-functional team from 1 to 5 as **SME/Scrum Manager**, managed **end-to-end client relations and strategy** for CLR project.
- Developed Python-based **algorithms and Databricks pipelines** to **automate data analysis** and compliance reporting, formulated 4 key KPIs for **monitoring compliance** and helping client leadership make decisions.

Reporting and Analytics Intern, Group Finance, UBS Business Solutions, Pune, India — *Jul 2019 – Dec 2019*

- Produced daily financial and reconciliation reports and supported management decision-making through accurate financial analysis and timely data insights.

Projects

Autonomous Agent Learning with Evolutionary Algorithms — *Aug 2025 – Dec 2025*

- Engineered a **tree-based Genetic Programming** framework to evolve **autonomous controllers** for GPac game.
- Developed a competitive co-evolutionary algorithm to evolve **adversarial Pac-Man and Ghost agents** simultaneously.
- Designed **agentic decision-making** logic using ramped half-and-half initialization, subtree crossover/mutation, and k-tournament selection to evolve adaptive policies **deploying reinforcement learning**.
- Applied multi-objective optimization using Pareto-front to **balance performance vs complexity** via parsimony pressure.

Zero Shot Object Counting — *Aug 2025 – Dec 2025*

- Implemented the VA-Count framework enabling **class-agnostic object counting** without human-labelled exemplars.
- Automated exemplar mining using **GroundingDINO and a CLIP-based classifier** for high-quality single-object examples.
- Achieved state-of-the-art performance using **PyTorch, CUDA and OpenCV** on the FSC147 dataset with reproducible code and open data and trained weights.

Object Recognition and Tracking — *May 2025 – Aug 2025*

- Designed a real-time classical vision pipeline to detect and **track fast-moving objects** under occlusion.
- Built and trained a CNN on MNIST for **digit recognition** and generalisation to custom handwritten inputs.