

Vatsalya Betala

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EDUCATION

Columbia University

M.S. in Artificial Intelligence. Incoming Fall 2026.

New York, NY

Dec 2027

Krea University

B.Sc. (Hons) in Computer Science & Mathematics. GPA: 8.89/10.

Sri City, Andhra Pradesh, India

Jun 2026

Relevant Coursework: Data Structures & Algorithms, Operating Systems, Discrete Mathematics, Linear Algebra, Probability & Statistics, Machine Learning, Deep Learning, Responsible AI, Database Systems, Numerical Methods

IIT Ropar

Diploma in Artificial Intelligence.

India

Jun 2026

Relevant Coursework: Neural Networks, Reinforcement Learning, Explainable AI, Computer Vision, NLP with Transformers, Applications of AI in Society

PROJECTS

Comparative Reasoning Dynamics of CNNs and Vision Transformers for Plant Disease

Jun 2025 – Present

Diagnosis

Undergraduate Thesis, advised by Dr. Chiranjib Sur and Dr. Shyam Kumar Sudhakar

- Investigating how CNN and Vision Transformer architectures differ in feature learning, attention allocation, and failure modes in a real-world plant disease classification setting.
- Conducting controlled experiments on Krea University's HPC cluster to study optimization trajectories, regularization effects, and representation drift across training runs.
- Evaluating reasoning consistency using interpretability techniques (Grad-CAM, attention maps, embedding analysis) to identify where similar accuracy masks divergent decision pathways.
- Prototyping a hybrid CNN-ViT model to assess whether combining local and global inductive biases improves robustness and interpretability under distribution shift.

Optimized Timetable Scheduling System

Sep 2023 – Apr 2026

- Built a conflict-free scheduling platform using Google OR-Tools and Integer Programming; developed backend with FastAPI, MariaDB, and Google Authentication for secure user access, reducing scheduling conflicts by 95% in pilot testing.
- Successfully deployed at Krea University (valued at Rs. 50,000); currently negotiating an institutional contract with IFMR College, Sricity, valued at Rs. 1.5 Lakh.

Modeling the Impact of Adverse Childhood Experiences on Mental Health Risk in

Dec 2023 – May 2024

University Students

Research, advised by Dr. Shyam Kumar Sudhakar

- Analyzed survey data (n = 404) using structural equation modeling, logistic regression, and random forests to investigate relationships between Adverse Childhood Experiences and mental health outcomes among Indian college students.
- Identified social support as a significant mediator between childhood adversity and mental health, consistent with peer-reviewed findings.

EXPERIENCE

AI Chief of Staff Intern

Apr 2026 – Present

Skai Lama

Noida

- Architected a Universal Context Bot using Claude Projects and MCP servers, giving the team natural-language query access to Notion, Slack, Trello, and Google Drive from a single interface, eliminating manual cross-tool lookups.
- Built an end-to-end AI content engine (n8n + Claude) automating signal collection, research briefs, and draft generation across Slack, Notion, Crisp, and Mixpanel sources, cutting manual content research time by approximately 70% and standardizing a versioned prompt library.
- Designed Slack-based automation systems (standup intelligence, sprint checklist generation, digest pipelines) using Claude and n8n to extract action items and performance signals from meetings, replacing manual reporting.

AI Optimization Intern

May 2025 – Jul 2025

Addverb

Noida

- Developed an LLM-powered SQL chatbot enabling warehouse managers to query operational databases via natural language, reducing query resolution time from hours to minutes.
- Analyzed Warehouse Execution System logs and proposed routing and decanting optimizations projected to increase pick efficiency by 8-12% in simulation.
- Benchmarked AutoStore-inspired coordination strategies, identifying scheduling heuristics that reduced robot congestion by approximately 15% under high-load conditions.

Machine Learning Engineer Intern

Dec 2024 – Mar 2025

LLMate

- Built an NLP-powered marketing analytics platform integrating 150k+ rows of Facebook Ads, Shopify, and Google Analytics data to deliver automated performance insights.
- Fine-tuned LLMs and developed RAG pipelines to enable real-time insights via natural language querying.
- Optimized prompt chaining and retrieval logic, improving query latency by 20-25% across common analytics requests.

Data Science & Product Intern

May 2022 – Jul 2022

Voiro Technologies

Bangalore

- Built lead-scoring models using XGBoost and PCA, improving sales opportunity identification by 45%.
- Automated ad-inventory workflows for Myntra, reducing manual processing effort by 30-35% and improving data consistency across campaigns.

ACTIVITIES & LEADERSHIP

Krea University

2024 – 2025

Teaching Assistant

- Assisted in teaching Discrete Mathematics (sophomores) and Responsible AI (juniors), including tutorials, grading, and doubt-clearing sessions.

Parmarth NGO

2021 – 2023

Co-Founder & CTO

- Led a team of 200+ volunteers across multiple Indian cities, assisting 800+ people with medical resources and essential support during crises including COVID-19. Designed and deployed a volunteer-matching web application; organized 20+ tech-awareness sessions. Recognized by Pathfinder Foundation and the Innovation & Entrepreneurship Cell of KJSIM, Mumbai.

SKILLS

ML Engineering & Systems: End-to-end ML pipeline development, scalable NLP systems, data engineering for high-throughput analytics, production deployment (FastAPI, Docker), latency optimization, logging and monitoring, HPC-based experimentation

Frameworks & Libraries: PyTorch, TensorFlow/Keras, scikit-learn, spaCy, LangChain, n8n

Programming Languages: Python (proficient), SQL (intermediate), JavaScript, C, R, Haskell, Racket

ML and AI: Vision Transformers, hybrid CNN-ViT architectures, RAG, LLM fine-tuning and evaluation, model interpretability (Grad-CAM, attention maps), training dynamics and optimization, representation learning

Optimization & Decision Systems: Constraint Programming (Google OR-Tools CP-SAT), integer programming, heuristics and search strategies, warehouse execution system optimization

CERTIFICATIONS

- Data Science: Machine Learning — HarvardX (Apr 2022)
- Certified Data Analyst Developer — WhiteHat Jr. (Jul 2021)

AWARDS & HONORS

- Won inter-college hackathon EMPOWER (IIM Ahmedabad Social Innovation Club and Ashoka University Social Impact Club & CS Society) for PlantGuard (team of 2); placed among 20 national finalists, awarded INR 50,000 prize (2025).
- Selected into the competitive IIT Ropar Diploma in Artificial Intelligence program (2024).