KRISHNA AGARWAL

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GitHub | LinkedIn | Webpage

PROFILE

Logical, patient, and hard-working individual with a strong commitment to delivering high-quality work. Highly motivated to understand concepts in depth and apply rational analysis to real-world problems.

TECHNICAL SKILLS

- **Programming Languages**: Python (SciPy, NumPy, Matplotlib, PyTorch, SimPy), C, C++, MATLAB
- **Web & Markup**: HTML, CSS, JSON, LaTeX, Prometheus
- **Tools & Platforms**: Autodesk Fusion 360, Canva, Ansys
- **Mathematics**: Real Analysis, Linear Algebra, Probability & Statistics
- **Others**: Prompt Engineering, Mathematica

EDUCATION

Indian Institute of Science, Bangalore
BTech. in Mathematics and Computing (Aug 2023 – Apr 2027)

- CGPA: 8.9 (Till date)
- Active participant in Computer Science Club- Database
- Relevant Coursework: Introduction to CS and Mathematics

Shivani Public School
CBSE Class 12 (2023): 96.8%

Seth M.R. Jaipuria School
ICSE Class 10 (2020): 98.4%

Standardized Test Scores:

- JEE Main: AIR 786
- JEE Advanced: AIR 606
- SAT: 1510
- IELTS: 8.5 Bands

RESEARCH & PROJECT EXPERIENCE

Reinforcement Learning: Theory and Applications
Under Prof. Gugan Thoppe | Ongoing Internship

- Simulated Hyperledger Fabric transaction flow and analyzed resource allocation bottlenecks.
- Proposed architectural and dynamic optimizations to enhance endorsement, ordering, and commit efficiency.

Validation of Novel Loss Function for Critic in RL
Under Prof. Gugan Thoppe | Ongoing Internship

- Working on validating the performance of a new loss function for the critic component in reinforcement learning.
- Performing extensive experiments on MuJoCo benchmarks to compare its performance against standard baselines.

Machine Learning Fundamentals
Under Prof. Chiranjib Bhattacharyya (Coursework) | 2025

- Implemented classical ML algorithms: PCA, regression models, decision trees, Fisher discriminants.
- Worked with multi-modal datasets: MNIST, CelebA facial images, stock market time series.
- Developed proficiency in data preprocessing, dimensionality reduction, and classification tasks.

Unsupervised Domain Adaptation
Under Prof. Chiranjib Bhattacharyya (Course Project) | 2025

- Reproduced results of domain adaptation algorithms: CORAL, DeepCORAL, Domain Separation Networks.

Distributional Reinforcement Learning
Under Prof. Shalabh Bhatnagar & Prof. Gugan Thoppe (Course Project) | 2025

- Recreated and evaluated the C51 algorithm.
- Compared performance against other SOTA algorithms like DQN.

Polygon Spaces and Möbius Transformations
Under Prof. Subhojoy Gupta | 2024 – 2025

- Conducted simulations supporting conjectures on simple polygon spaces and topological homeomorphisms.

Foundations in Machine Learning
Under Prof. Chandrasekaran Pandurangan | 2024 – Present

- Developed strong foundations in Linear Algebra, Probability, and Statistics.
- Studying ML paradigms like multiclass classification and ranking via seminars.

COMPETITIONS AND ACHIEVEMENTS

- International Quant Championship (IQC) 2025 – Cleared Stage 1 (Qualifier Round), ranked in top 20%

ADVANCED COURSEWORK

- **E1 277**: Reinforcement Learning
- **UMC 201**: Data Structures and Algorithms
- **UMC 203**: Introduction to AI/ML
- **UMC 205**: Automata and Computability

ONLINE PROFILES

- GitHub: https://github.com/krishna16032005
- LinkedIn: https://www.linkedin.com/in/krishna-agarwal-61bb51199
- Webpage: https://krishna16032005.github.io/portfolio/