

# Samarth Rao

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## EDUCATION

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**International Institute of Information Technology, Hyderabad**      2024 – Present  
B.Tech + M.S. (Dual Degree) in Computer Science

**National Academy For Learning, Bengaluru (NAFL)**      2020 – 2024  
High School Education

## INTERESTS

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- Artificial Intelligence
- Logical Reasoning / Problem Solving
- Mathematics
- Edge AI

## PROJECTS

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### Agentic Edge Orchestration

A method of distributing inference of an AI model in an edge cluster using reinforcement learning to optimise for low end-to-end latency while accounting for real-time network conditions.

### Memetic Knapsack   [Code](#)   [Report](#)

A new memetic algorithm for the 0/1 Knapsack problem that integrates Lagrangian Relaxation for variable fixing, Deterministic Crowding with Island Model for diversity, and Simulated Annealing local search. Evaluated against a standard Genetic Algorithm baseline.

### Collab-Doc   [Code](#)

Implementation of a simplified shared document system with support for concurrency and access control, implemented in C.

### MyShell   [Code](#)

A custom shell, implemented in C.

### C-Shark   [Code](#)

A terminal-based packet sniffer, implemented in C.

### Minimal ZSH   [Code](#)

Minimal zsh setup with autosuggestions, syntax highlighting, history tweaks, git branch display, and python virtualenv detection.

## ABOUT

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Undergraduate researcher pursuing a dual-degree (B.Tech + M.S.) in Computer Science at IIIT Hyderabad, currently in the second year of studies. Open to exploring various areas of computer science with a focus on artificial intelligence, algorithmic problem-solving, and more.