Meet Banthia

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Education

New York University - Courant Institute of Mathematical Sciences **Aug 2025 – May 2027**
Master of Science in ***Computer Science*** ***GPA : 4.0/4.0***

National Institute of Technology Karnataka, Surathkal **Dec 2021 – May 2025**
Bachelor of Technology in ***Computer Science and Engineering*** ***CGPA: 8.51/10***

Experience

Oracle - Server Technology Intern **May 2024 – Jul 2024**

- Designed and implemented a Continuous Integration/Continuous Deployment (CI/CD) pipeline serving as the quality gatekeeper for Cloud Platform Services.
- Configured automated triggers for new service releases from active branches.
- Integrated automated test execution on Preflight (Gamma stage) environments where services were deployed in real-time.
- Established a 95% minimum pass rate threshold for integrated tests before upstream promotion to Fusion Apps.

Healthcare Analytics and Language Engineering Lab - NLP Intern *[GitHub]* **May 2023 – Aug 2023**

- Developed a novel algorithm for acronym-to-expansion mapping, addressing ambiguity in Indian legal judgments.
- Built *dataset* of 70 legal judgments with 15,000+ annotated sentences, in collaboration with law students.
- Conducted evaluations with large language models (T5, LLaMA, Gemini) to benchmark summarization quality and compare performance.

Projects

Tensor-Core-Based CUDA Kernel Optimization for Gaussian Splatting **Sept 2025 – Nov 2025**

- Studied core NeRF and Gaussian Splatting literature, including 3DGS, TC-GS, and CLM reserach papers, to understand real-time rendering pipelines.
- Profiled Tensor Core–accelerated CUDA kernels across the Gaussian Splatting pipeline on an RTX 2080 Ti to identify performance bottlenecks.
- Investigated and experimented with kernel-level optimizations, focusing on memory access patterns, tensor core utilization, and workload distribution.
- Explored CLM's CPU–GPU offloading strategy to enable Gaussian Splatting on consumer GPUs and analyzed design trade-offs compared to naive offloading.

ForkAndMove : Parallel Chess Engine *[GitHub]* **Sept 2025 – Dec 2025**

- Built a high-performance chess engine using bitmap-based board representation for fast move generation and evaluation.
- Implemented an optimized parallel Alpha-Beta search and integrated Principal Variation Search (PVS) to improve pruning efficiency. Developed efficient move generators and handled complex rules like castling and en-passant using pure bitwise operations.
- Analyzed performance improvements through advanced move ordering heuristics and algorithmic variations like multi-child PVS search.

Technical Skills

Languages: C/C++, Rust, Python, Standard ML, SQL
Developer Tools: Git, Jenkins, Postman, Docker
ML Toolkit : Scikit-learn, Pandas, NLTK, LexNLP, Keras, TensorFlow, PyTorch, NumPy, OpenCV
Relevant Coursework: Programming Parallel Algorithms, ML Systems, Honors Analysis of Algorithms, Computer Networks, Wireless Networks, Cloud Computing, Cloud Networking, Digital Image Processing, Operating Systems, Database Management System, Computer Architecture, Advanced Data Structures, Discrete Mathematics, Approximation Algorithms

Volunteering

IEEE NITK - Executive Member, CompSoc Group **Nov 2022 – May 2025**

- Organized and managed multiple technical events and hackathons including **Silicon Maze**, **Eureka**, **Praelium**

Web Enthusiasts' Club, NITK — Executive Member, Algorithm Group **Nov 2022 – May 2025**

- Organized and managed technical events and hackathons like **CPLeague**

Achievements

- Secured **All India Rank 1117** in JEE MAINS among more than 1.2M+ candidates.
- Secured **All India Rank 2697** in JEE ADVANCE among 200K+ candidates
- Consecutively secured **Gold Medal** in INTER NIT Table Tennis tournaments 2022-23(NIT Silchar), 2023-24(NIT Jamshedpur). 2024-25(NIT Jalandhar)