Ananth Krishna Kidambi
Computer Science & Engineering
Indian Institute of Technology Bombay

210051002
B.Tech.
Gender: Male
DOB: 18/01/2003

Examination	University	Institute	Year	CPI / %
Graduation	IIT Bombay	IIT Bombay	2025	

Pursuing a **Minor** in the **Centre for Machine Intelligence and Data Science**.

Scholastic Achievements

- Received the **Institute Academic Award** for securing **Institute Rank 1** and scoring **10 CPI**. *(2021-22)*
- Secured **Department Rank 1** in the UG first year and **Department Rank 6** in the UG second year. *(2021-23)*
- Was awarded **4 AP** (Advance Performer) grades for excellence in *Data Analysis and Interpretation*, *Digital Logic Design and Computer Architecture Lab*, *Basics of Electricity and Magnetism*, and *Physical Chemistry*. *(2021-23)*
- Secured **All India Rank 13** in *JEE Advanced* and **All India Rank 10** in *JEE Mains*. *(2021)*
- Achieved **All India Rank 29** in the *Kishore Vaigyanik Protsahan Yojana Exam (KVPY), SX*. *(2020)*
- Secured **All India Rank 2** in the **INChO**(*Indian National Chemistry Olympiad*) conducted by HBCSE. *(2021)*

Research Internship

Model Counting using Lifted Inference | *School of Computing, NUS* *(May 2023 - July 2023)*

Instructor: Prof. Kuldeep Meel

- Worked on implementation of the **Crane**† algorithm used for weighted first-order model counting.
- Developed and implemented algorithms for simplifying, finding base cases, and solving sets of recursive equations.

†*Dilkas, P., Generalising Weighted Model Counting(2023)*

Key Projects

Linear Algebra Library | *Self-Project* *(ongoing)*

- Made a library implementing structures and algorithms of **Linear Algebra** in C++, along with documentation.
- Implemented algorithms to find the **inverse**, **determinant**, and **Q-R decomposition** of matrices.

Object Oriented Texture Analysis | *CS-736 Course Project* *(April 2023)*

Instructor: Suyash Awate

- Implemented a paper on object-oriented texture analysis for unsupervised segmentation of cancer biopsy images.
- Implemented algorithms to divide the image into circular objects and analyze the patterns and texture of the circular objects.

Efficient Prefetching for Graph Workloads | *CS-230 Course Project* *(April 2023)*

Instructor: Biswaban Panda

- Optimized the **Instruction Pointer Classifier Based Prefetcher (IPCP)** for graph workloads.
- Improved the IPCP prefetcher by adding support for prefetching over multiple pages using the **TLB**.

Solving Puzzles using SAT Solvers | *CS-228 Course Project* *(March 2023)*

Instructor: Ashutosh Gupta

- Implemented a sliding puzzle solver using the **Z3** package in *Python*.
- Encoded the game as a *SAT problem* and used *Z3* to get a solution.

Fast Chat | *CS-251 Course Project* *(Autumn 2022)*

Instructor: Prof. Kavi Arya

- Built a **chatting software** using the Python socket library and other open-source libraries.
- Used socket, authentication, and communication libraries in Python and SQL for the server database.

Learning with Quantum Computers | *Winter in Data Science* *(December 2022)*

- Read parts of the book "Quantum Computation and Quantum Information" by Nielsen and Chuang.
- Implemented the Deutsch-Jozsa algorithm and a variant of the algorithm in Qiskit and Pennylane respectively.
- Read the research paper "An Introduction to quantum machine learning" by Maria Schuld et al.

Technical Skills

Languages	C/C++, Python, Java, Scala, Bash, Assembly, VHDL, PostgreSQL, Prolog, Haskell
Software	Git, LaTeX, Markdown, MATLAB, Sed, Awk, OpenGL, FLTK, AutoCAD, GDB, Wireshark, NS3, VTune, Docker
Data Science Libs	NumPy, Pandas, MatPlotLib, Pennylane, SciPy
Development	CSS, Bootstrap, HTML, Javascript