



Ajinkya Atul Tanksale  
Computer Science & Engineering  
Indian Institute of Technology Bombay

213050034  
M.Tech.  
Gender: Male  
DOB: 10/12/1998

Examination	University	Institute	Year	CPI / %
Post Graduation	IIT Bombay	IIT Bombay	2023	9.35
Graduation	SRT Marathwada University	SGGS Institute of Engineering and Technology	2020	8.74
Graduation Specialization: Computer Science and Engineering				
Intermediate	State Board of Maharashtra	Deogiri College	2016	84.92%
Matriculation	State Board of Maharashtra	Shri Saraswati Bhuwan High School	2014	96.60%

## INTERNSHIP

- **Iauro Systems Pvt Ltd, Pune** (1 March 2020 - 31 July 2020)
  - Worked on the development of various micro-services as a **back-end developer** on a DevOps project.
  - Developed APIs for back-end functionalities as per the requirements from UI/UX team.
  - Improved the database structure and created additional views for improving the response time of APIs.
  - Designed and developed a **YAML to Groovy Script translator** for Jenkins pipelines using JavaScript.
  - Provided implementation of required tools for the project.
  - Investigated and resolved software issues.
  - Collaborated with seniors on solving design issues and actively participated in daily scrum meetings.

## M.TECH THESIS PROJECT AND SEMINAR

- **Development of Domain Specific Language for specifying and building 5G network functions**  
(M.Tech Project, Guide: **Prof. Mythili Vutukuru**) (June'22-Present)  
Technologies: Python, C++
  - **Objective:** Designing and Developing a **Domain Specific Language** that provides a framework to represent 5G call flows in an unambiguous and intuitive way.
  - Develop translators for converting Domain Specific Language into CPP code.
  - Currently working on designing the framework, evolving the language, and developing translators.
  - In phase 2, we will work on adding semantic verification and optimizations to minimize user efforts.
- **Study of Session Management Procedures in 5G Packet Core**  
(M.Tech Seminar, Guide: **Prof. Mythili Vutukuru**) (Jan'22-May'22)
  - Studied various 5G Session Management Procedures from 3GPP specifications and existing Code-base.
  - Studied various protocols, and messages exchanged between network functions in the 5G packet core.
  - Brainstormed on alternate representations for specifications to increase readability and reduce ambiguities.

## COURSE PROJECTS

- **Multi-threaded Key-Value Store**  
(CS744: Design and Engineering of Computing Systems, Guide: **Prof. Umesh Bellur**) (July'21-Nov'21)  
Language Used: C++
  - Designed a **multithreaded client-server application** running on top of gRPC.
  - Implemented persistent key-value storage using file systems to ensure durability.
  - Implemented various caching techniques like LRU and LFU for better response times.
  - Analyzed performance of the system in terms of throughput and response time by varying different system characteristics.
- **DSA Visualiser**  
(CS699: Software Lab, Guide: **Prof. Kavi Arya**) (July'21-Nov'21)  
Languages and Frameworks Used: HTML, CSS, JavaScript, Django, MongoDB
  - Developed a web application to **animate memory-level operations** of basic data structures and algorithms with code dictation.
  - Implemented user dashboard to track learning history using Django and MongoDB.
  - Implemented a generic library for all the animations using vanilla JavaScript.

- **Web Server Simulation**

(CS681: Performance Analysis of Computer Systems and Networks, Guide: **Prof. Varsha Apte**)

(Jan'22-May'22)

Language Used: C++

- Implemented a **discrete event simulation** of a multithreaded web server in order to analyze the relationship between system parameters and performance metrics.
- Simulated request buffer, scheduler with FIFO and round robin scheduling policies, context switching, and users to get closer to an actual web server.
- Analyzed performance of the server in terms of response time, waiting time, and throughput by varying system parameters like number of users, number of requests per user, context switching time, service time.

- **Automatic Image Captioning**

(CS725: Foundations Of Machine Learning, Guide: **Prof. Preethi Jyothi**)

(July'21-Nov'21)

Language Used: Python

- Used CNN on top of InceptionV3 to extract image features and RNN (GRU) with attention to generate captions for the given image.
- Performed qualitative and quantitative analysis using BLEU score as performance metrics.

- **Xv6 Shell**

(CS744: Design and Engineering of Computing Systems, Guide: **Prof. Umesh Bellur**)

(July'21-Nov'21)

Language Used: C

- Implemented a prototype of shell in Xv6 with basic bash commands.
- Provided features like serial and parallel execution of commands along with input redirection.

## MAJOR COURSES TAKEN

- Design and Engineering of Computing Systems
- Wireless Networks
- Performance Analysis of Computer Systems and Networks
- Program Analysis
- Foundations of Machine Learning
- Software Lab

## POSITIONS OF RESPONSIBILITY

- **Teaching Assistantship**

- **CS744: Design and Engineering of Computing Systems (Prof. Mythili Vutukuru)**

(Ongoing)

- \* Evaluating assignments and exams, resolving doubts related to assignments.
- \* Assisting professor in creating assignments.

- **CS101: Computer Programming and Utilization (Prof. Akshay S)**

(Spring'22)

- \* Supervised a group of 12 students and helped them with labs and course material.
- \* Assisted in proctoring quizzes and examinations.

- **CS101: Computer Programming and Utilization (Prof. Parag Chaudhuri)**

(Autumn'21)

- \* Guided group of 13 first-year undergraduate students.
- \* Attended to their doubts and helped them understand course content better.

- **Interview Coordinator, Institute Placement Team, IIT Bombay**

(Dec'21)

- Coordinated with a team of **250+** members for interviews of **1800+** students.
- Assisted in conducting Tests for **20+** firms, and handling student queries.

## TECHNICAL SKILLS

- **Programming & Scripting Languages:** C, C++, Java, Python, JavaScript, Bash.
- **Web Development:** HTML, CSS.
- **Tools:** MySQL,  $\LaTeX$ , GIT.

## ACHIEVEMENTS AND HOBBIES

- Secured **All India Rank 42** amongst **101922** students in GATE CS2021.
- Participated in **Open Mic** event organized by YourQuote at SGGS Institute of Engineering and Technology.
- **Hobbies:** Composing poems, Reading about history.