Ashish Pandey
Computer Science & Engineering
Indian Institute of Technology Bombay

M.Tech
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Examination	University	Institute	Year	CPI/%
Post Graduation	IIT Bombay	IIT Bombay	2023	7.86
Graduation	A.K.T.U.	KNIT Sultanpur	2021	8.99
Intermediate/+2	CBSE	D.M.A, Rampur	2016	92.00
Matriculation	CBSE	D.M.A, Rampur	2014	10

M.TECH PROJECT & SEMINAR

- **Implementing SimpleCpp - Graphics Library Using Qt** *(June'22-till date)*
  *(M.Tech Project, Guide: **Prof. Abhiram Ranade**)*
  Technology: C++, Qt, Oops
  - Reviewed and Analysed existing simplecpp code architecture to understand existing functionalities over **xlib/x-server** and implemented functions over Qt to enhance its portability & robustness.
  - Developed and implemented a **2-D** graphics library using Qt which is added as Computer Programming and Utilization **(CS-101) course** in UG curriculum at **IIT Bombay** & **course certification** also available at **NPTEL** platform.
  - Designed an easily extendable and maintainable architecture for Simplecppp, ensuring its correctness through **GCOV testing** as evidence and also Conducted a comparative analysis with the previous version to demonstrate its improved efficiency.

- **Implementing SimpleCpp Using Qt** *(Jan'22-May'22)*
  *(M.Tech Seminar, Guide: **Prof. Abhiram Ranade**)*
  - Studied Qt Framework thoroughly for basing SimpleCpp implementation & Developed several projects over Qt.
  - Developed understanding and reviewed SimpleCpp existing architecture and its implementation.
  - Developed test code & performed **unit testing, integration testing, and performance testing** over existing SimpleCpp QT-based implementation

COURSE PROJECTS

- **ECommerce WebAPP using Angular** *(July'21-Nov'21))*
  *(CS699: Software Lab., Instructor: **Prof. Kavi Arya**)*
  Technology: Python, Angular, Django
  - Developed a scalable E-commerce webApp using Angular for FrontEnd, Django for backend, PostgreSQL for database and Android/IOS App using Typescript/Ionic
  - Developed a **product recommendation system** using textual clustering analysis model given in product description for better customer acquisition and retention using python.

- **Sports Match Video to text Summarization** *(July'21-Nov'21)*
  *(CS725: Foundations of machine learning, Instructor: **Prof. Preethi Jyothi**)*

  Technology: Python
  - Generated Cricket match video summarization by classifying scenes into 5 major classes
  - Prepared dataset from open source cricket Match video and performed data preprocessing, augmentation and manually classifying the same.
  - Build **AlexNet CNN Model** from scratch pipelined with Transfer Learning Layers to obtain accuracy of **50.6 %**
  - Employed pre-trained **VGG16 Model** to achieve accuracy of 50.9 Percent for five classes of Scene Classification and accuracy of **98.28 Percent** for two major classes of **Scene classification**

- **Verifying program under sequential consistency**,
  *(CS 766: Analysis of Concurrent Programs, Instructor: **Prof. Ashutosh Gupta & Prof. S Krishna**)* *(Jan'22-Apr'22)*
  - Developed a tool for verification of programs under sequential consistency using python.
  - Outputted all the **valid traces** for any program as an input and detected the **assertion violating traces** .

- **Effects of implementation of three Farm laws in India** *(Jan'22-May'22)*
  *(CS752: System Dynamics: Modeling and Simulation for Development, Instructor: **Prof. Om P. Damani**)*
  - Build a **simulator** to model and analyze the effect of three farm laws implementation in India using Vensim tool
  - Extracted data and information from various legal sources to tune hyper-parameters
  - Designed the CLD & Stock-Flow diagram by proposing parameters, lookup tables, variables, units and equations

UNDERGRADUATE PROJECT

- **A Restaurant Management Website Using React** (Aug'20 - May'21)
  *(B.Tech. Major Project, Guide: **Prof. Samir Srivastava & Prof. Dileep Singh Rathore**)*
  - Designed and developed a Restaurant website using **reactJS** that helps to manage restaurant during Covid-19
  - Deployed **WebApp on JSON-Server(npm module)** and used r**react animation comp. and redux for state mgmt.**
  - Design test-case and performed white-box & Black-box testing for uncovering flaws
- **An Accounting System** *(Jul'19 - Dec'19)*
  *(B.Tech. Course Project, Instructor:**Prof. Baburam Yadav**)*
  - Worked on the Software Engineering aspect of the project to ease the logistics & accounting system
  - Built detailed **SRS report, Use Case models, State (Flow) charts, activity, sequence and data flow diagrams** and performed the cost analysis using **COCOMO Estimation Model**.

POSITION OF RESPONSIBILITIES

- **Academic Unit Representative of Academic Affairs(AURAA) | CSE Department** *(June'22-till date)*
  - Representing & Mentoring **300+ Master's CSE students** at the Department level(DPGC Committee) as well as at the institute level and guiding them in **all matters** concerning **Academics**
  - Done Smooth **Onboarding of 150+ PostGraduate CSE Freshers'2024 Batch** along with Department ISCP team
  - Organized Department **Mini-Convocation** for Graduating class of 2020 & 2021 and Department **Main Convocation** for Graduating class of 2022 along with PGRep & CSEA council members.
  - Organizing various Institute level and Department level **workshops** to improve students' skillset
- **Teaching Assistantship**
  - **CS6001: Game Theory and Algorithmic Mechanism Design(Prof. Swaprava Nath)** *(Ongoing)*
    - Assisting the professor to manage various course logistics and in examining quizzes, mid-sem and End-sem
  - **CS101: Computer Programming and Utilization(Prof. S. Akshay)** *(Spring 2022)*
    - Mentored 12 students throughout the semester in labs and during the help session and volunteered in proctoring the mid-sem examination
  - **CS101: Computer Programming and Utilization(Prof. Parag Chaudhuri)** *(Autumn 2021)*
    - Guided and helped 12 students assigned to me throughout the semester for labs and theory
    - Assisted the professor in evaluating the Course Project

MAJOR COURSES TAKEN

- CS 699 : Software Lab
- CS 601 : Algorithms and Complexity
- CS 766 : Analysis of Concurrent Programs
- CS 752 : System Dynamics: Modeling and Simulation
- CS 770: Process Engineering
- CS 725 : Foundation of Machine Learning
- CS 780: Critical Thinking for the digital age
- CS 745: Principles of Data and System Security
- CS 675: Computer Graphics

TECHNICAL SKILLS

- **Programming & Scripting Languages**: C++, Python, Bash, Javascript
- **Tools & Libraries**: Git, LaTeX, cmake, MySql, OpenGL, Vensim, Qt, Sourcetrail, PIPE

ACHIEVEMENTS and EXTRA CURRICULAR ACTIVITES

- Secured **AIR 164** amongst 101922 candidates in **GATE Computer Science** [2021]
- Received **Tablet&Award** for being Gate topper from **U.P. Govt.** felicitation ceremony organised by **A.K.T.U** [2021]
- Achieved **A and above grade points** in **31 out of 38** subjects in Btech Computer Science [2021]
- Received Award for being among the **top 0.1** successful candidates in Class X from **CBSE Board** [2014]
- **Hobbies**: Cricket, FoosBall, 8-Ball Pool, Online Gaming, Badminton, Travelling, Farming