Utkarsh Sharma

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Education

2023 – Present   **The Ohio State University**
Master of Science in Computer Engineering.

2020 – 2022   **Indian Institute of Technology Kanpur**
Master of Science in Mechanical Engineering; GPA: 8.75/10.
Thesis title: *Surrogate Modelling For Composite Damage Analysis Using Machine Learning.*

2015 – 2019   **DCRUST, Murthal.**
Bachelor of Technology; GPA: 7.52/10.
Project title: *Fabrication, Testing and Automation Of Minimum Quantity Lubrication System.*

Research Experience

2020 – 2022   **Department of Mechanical Engineering, IIT-Kanpur**
Surrogate Modelling For Composite Damage Analysis Using Machine Learning
Studied and executed homogenization of composite laminates.
Studied response of 2D and 3D composite structures under different loading conditions.
Created RVE(representative volume element) to get equivalent response variables of a complex composite laminate under loading.
Created a Machine learning model to predict the response variables under similar loading conditions.

2015 – 2019   **DCRUST, Murthal**
Fabrication, Testing and Automation Of Minimum Quantity Lubrication System.
During the turning process, flood lubrication is usually used on the workpiece which results in wastage of lubrication and hazardous work environment.
Created a minimum quantity lubrication setup to provide optimum quantity of lubrication at workpiece and tool interface.
Automated the process of lubrication injection according to the cutting speed and the material used using a script to provide just enough lubrication at the interface.

Teaching Experience

2020-2023   **Preply.com**
Professional Java Instructor
More than 2 years of experience, delivered more than 100 lectures and helped students with their basic understanding of Java, Data-structures and with different projects.

2021   **Indian Institute of Technology Kanpur**
Teaching Assistant - Data Structures and Algorithms
Part of a team of 4 students who conducted a series of tutorials on Assignments given in the lectures.
The lectures included a handpicked set of questions by the professor to clear all basic concepts.

Teaching Experience (continued)

2020   **Indian Institute of Technology Kanpur**
Teaching Assistant - Manufacturing Science and Technology.
Conducted regular laboratory sessions with batches of 150 students.
Assisted faculty with evaluations of laboratory and project components of the course.

   Coding Ninjas
Teaching Assistant - Data Structures and Algorithms.
On completion of course at Coding Ninjas, I got opportunity to work part-time as a teaching assistant.
Helped many students with basic understanding of the concepts of DSA and the practice questions in the course.

Industry Experience

2021   **Larsen & Toubro Infotech Limited, Bangalore, India**
Senior Software Engineer
Worked on a product 'Spectra' which is an ETL (Extract, Transform & Load) based product.
Created a clientOffboarding utility, a comprehensive tool that seamlessly interacted with every aspect of the product, including databases, Kubernetes pods, mount paths, and elastic search logs. This utility efficiently deletes client's data during the offboarding process.
Created a bash script to automate pre-post deployment activites to reduce error and save time in the process.

2020   **TcsION, Remote Internship**
Devops Engineer Intern.
Gained hands-on experience in transformative technologies. Mastered Docker and Kubernetes, comprehending their pivotal roles in modern software deployment.
Led the creation of robust CI/CD pipelines, automating software delivery for seamless integration. Crafted precise Docker images, encapsulating applications and dependencies effectively. Authored Kubernetes YAML configurations, enabling smooth deployment and management.

Skills

Tols and Languages	Java, C/C++, MATLAB, Java, Abaqus, Catia, Solidworks, MySQL.
Databases	Mysql, Postgresql, sqlite, Azure, Snowflake, ElasticSearch.
Web Dev	Html, css, JavaScript.
Misc.	Teaching.

Recent Projects

2020 – 2022   **Gitlet - Mini version of Git**
Created Gitlet init – initialize a hidden .gitlet directory inside the working directory. Created staging area and commit directories inside .gitlet directory.
Created working commands for Gitlet add to add changes to staging area, gitlet commit which would make a new commit object, store the changes in this object and would use hashmap to convert all the files in current working directory and can be accessed using a HashMap. Finally created Gitlet log, gitlet merge, gitlet rebase

Recent Projects (continued)

2020 **Enigma Project**
In World War II, Germans used Enigma to encrypt and decrypt communications and messages. Studied how this machine works, and how different rotors behave according to the incoming signals.
Implemented the logic to replicate the working of a fully functional Enigma machine in Java.

MineSweeper Game
Created a fully functional Minesweeper game on Java Intellij. Created both the backend code and the user interface part of the game.
On running the main method, a screen pops up with the board of Minesweeper, the user can then click on the boxes to proceed with the game.s.

SPECIALIZED COURSES

Data Structures and Algorithms, Mathematics For Engineers , Artificial intelligence, Machine Learning and its Applications , Database Management Systems , Operating Systems , Information Theory and Coding, Operations Research.

LEADERSHIP, TEAMWORK, AND VOLUNTEERING EXPERIENCE

- Contributed in the creation of the university's fest - "Antaragni" 's website at IITK
- Co-ordinator Of Music In University Level Youth Cultural Festival- "RHYTHM"
- Managed more than 100 students during the university fest.
- Represented DCRUST in Association Of Indian Universities
  Awarded third position in a musical event among 100 plus universities.