

MAYANK GARG

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EDUCATION

National Institute of Information Technology, Tiruchirappalli, India (NIT Trichy)

May 2021

Bachelor of Technology (B.Tech.) in Computer Science and Engineering, WES GPA: 3.72/4.00

TECHNICAL SKILLS

Languages: Java, C++, Python, Shell Programming, Javascript, Data structures, Algorithms

Tools & Frameworks: SpringBoot, Bootstrap4, AWS, Kafka Streams, Git, Docker, Linux, Liquibase, MongoDB, Amazon DynamoDB, S3, Machine Learning, Cryptography, Microservices, Design Patterns, System Design, PyTorch, Keras, Numpy, Pandas, Tensorflow

WORK EXPERIENCE

Software Engineer II, JP Morgan Chase & Co

Nov 2023 – Present

- Designed and implemented a service to create notional pools with multiple participants, calculating individual account interest and pooled benefits based on aggregate balances.
- Utilized **Kafka Streams** for seamless data flow, event replay, and **real-time aggregation of balances and rates**.
- Optimized financial operations by providing accurate interest computations and enhanced pooled benefits visibility.
- Led to client onboarding from other banks and retention, driving profit growth.

Software Engineer I, Goldman Sachs

July 2021 – Nov 2023

Inventory Management

- Developed an in-house version control system using **Gitlab** and **AWS DynamoDB** to create and manage git repositories, thereby **reducing the infrastructural cost by 10%**.
- Implemented a system to sync inventory data from third-party sources.

Control Reporting

- Developed an e-metric reporting system to build pipelines and version control systems to save infrastructure costs while ensuring compliance with industry standards.
- Created **indexing in in-house Amazon S3** to optimize the reporting system which **reduced processing time in production by 80%**.

MarcusPay

- Led end-to-end development of promo codes for loan applicants, **resulting in a 10% increase in user engagement and retention**.
- Introduced an innovative approach to ensure **data integrity and robust user protection** by leveraging **HMAC SHA 256 encryption** instead of solely relying on URL transmission from the partner.
- Integrated Point of Sale** for consumer loans, streamlining transaction processes and improving customer experience.
- Developed a **Fake Mongo implementation** during an annual hackathon, leveraging an in-memory database to replace Mongo connections for testing **reducing test execution time by 20%**.
- Initiated efforts to elevate code quality and standards by introducing design patterns, rigorous testing, and code review protocols.

Software Engineer Intern, Goldman Sachs

May 2020 - Jun 2020

- Spearheaded the development and migration of integration tests into microservices pipelines, enhancing test reliability and streamlining workflows.
- Led service deployments using **Kubernetes and Docker**, enabling efficient scaling and cross-environment management within a microservices architecture.

Research Intern, NIT Trichy, Shamir's Secret Sharing

May 2019 - Jun 2019

- Utilized a series of protocols employing addition and multiplication operations to process shares from multiple parties.
- Produced final secret value by involving a specified minimum number of parties in the process, reducing calculation time **by 15%**.

Machine Learning Intern, Takenmind Technologies

Jan 2019 - Feb 2019

- Developed predictive models utilizing machine learning algorithms to forecast employee attrition, facilitating retention strategies and contributing to enhanced workforce stability and organizational performance with **87.8% accuracy**.

PUBLICATIONS

- Bajpai A., **Garg M.**, Hindi Sentiment Analysis on Tweets, 2nd International Conference on Artificial Intelligence: Theory and Applications (AITA 2024). [SCOPUS][DBLP]- **Accepted & Presented**
- Garg M.**, Bajpai A., Kumari S., Rathi S., Dahiya T., Ghosh A., AI-Driven Radiomics for Early Detection of Gynaecological Cancers: A Multimodal Approach, International Conference on Smart Cyber-Physical Systems (ICSCPS-2024). [SCOPUS] - **Accepted & Presented**

PROJECTS

[Hindi Sentiment Analysis on Tweets](#)

Oct 2023 – Jan 2024

- Developed a sentiment analysis model for Hindi tweets, addressing the research gap in the Hindi language on Twitter(X) tweets.
- Developed and compared approaches: Lexicon-based (Hindi-SentiWordNet) and Machine Learning-based (**Naïve Bayes Classifier**).
- Identified an enhanced lexicon-based method, utilizing positive and negative word counts, as the most accurate for sentiment analysis in the Hindi language, accuracy improved from **41% to 65%**.

[Oyente Tool](#)

Apr 2020 - May 2020

- Enhanced the existing Oyente tool to detect three new vulnerabilities in **Blockchain smart contracts** - External Contract Referencing, Efficient Transaction Ordering Dependence, Tx_Origin.
- Analyzed 1,200 smart contracts, **identifying these vulnerabilities in 280 cases**, and improving the security assessment process.

[Future COVID-19 cases prediction](#)

Dec 2019 – Jan 2019

- Predicted the future COVID-19 cases of the next 7 days using a **Recurrent neural network**.
- Performed **Hyperparameter tuning** using the Bayesian optimization algorithm.

POSITIONS OF RESPONSIBILITY

Captain, Department Hockey Team, Sports Fete

Aug 2018 – Jul 2019

Manager, Pragyan Workshop (NIT Trichy Technical Fest)

Oct 2018- Mar 2020

Volunteer, Kshitiksha Foundation

Jul 2024 - Aug 2024

Teacher Volunteer, Sarvam Shakti

Aug 2024 - Oct 2024