Anshul Mallick

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Education

- **Arizona State University** August 2023 - May 2025
  Masters in Computer Science *Tempe, United States*
  ***Relevant Coursework**: Foundation of Algorithms, Mobile Computing, Knowledge Representation and Reasoning*
- **Indian Institute Of Technology (IIT) Dhanbad** July 2017 - May 2021
  Bachelor of Technology in Electronics and Instrumentation Engineering *Dhanbad, India*
  ***Relevant Coursework**: Computer Programming, Data Structures, Machine Learning, Computer Networks*

Technical Skills

Languages: Python, C++, HTML/CSS, JavaScript, SQL, GraphQL
Technologies: AWS (EC2, EKS, Lambda, MWAA, S3, SQS, SNS), Snowflake, Airflow, Docker, Bitbucket, Git, GitHub
Libraries/Frameworks: FastAPI, NumPy, Pandas, Boto3, Keras, Tensorflow

Experience

- **Invesco - AlphaNextGen (ANG) Team** November 2021 - August 2023
  Software Engineer 1 *Hyderabad, India*
  - **Data Portal APIs**: Built multiple **GraphQL APIs** for portfolio and security level accounts in **FastAPI** framework with asynchronous functionality. Optimized for performance, reducing the overall server response time by 50%.
  - **Security and Authentication**: Ensured secure GraphQL API access by implementing **JWT**-based authentication and role-based permissions. Custom resolvers were written to fetch data from various sources, saving over 25% in code debugging time.
  - **AWS Lambda Data Extraction**: Architected a serverless **Lambda**-based data extraction tool that improved data extraction time by 43%, querying data from source domains and outputting to **S3** and on-prem locations.
  - **Mail Delivery System**: Integrated email functionality based on **SMTP** using Test Driven Development (TDD) with pytest, increasing code coverage from 30% to 70%.
  - **Excel Power Query Generator**: Engineered a **ReactJS** tool to transform **GraphQL** queries into MQuery for immediate use by Portfolio Managers, reducing trade placement time by 30%.
  - **Apache Airflow for Automation**: Employed **Apache Airflow** and DAGs to trigger and schedule dbt (data build tool) processes to save over 4 days in a sprint cycle, accelerating analytical insights delivery.
  - **Data Integration with Airbyte**: Integrated **Airflow** with **Airbyte** to efficiently transfer data from 5 source systems into **Snowflake** Data Warehouse, reducing time-to-market by half.
  - **Performance Optimization**: Addressed performance bottlenecks and automated the load of CSV and XLSX files, scaling up performance by 65%.
  - **Amazon EKS Clusters**: Devised, configured, and deployed multiple **Amazon EKS** clusters, integrating **Docker** containers and managing scaling with **EC2** instances and **Load Balancers (ELB)**.

Projects

- **VirtualMeet**: Created a WebRTC-based video conferencing platform with real-time audio/video, chat, screen sharing, and collaborative whiteboard. Ensured low-latency, high-quality communication. (Tech-stack: JavaScript, ReactJS, ExpressJS, NodeJS, MongoDB)
- **GPT3 UI**: Crafted an intuitive GPT-3 frontend with modern UI/UX using React, HTML, and CSS. Mastered fundamental CSS techniques, ensuring exceptional responsiveness and code maintainability. (Tech-stack: ReactJS, HTML, CSS)
- **FinWiser**: Designed a secure finance management web app with Google account authentication and APIs for CRUD operations and detailed summaries with filters. (Tech-stack: ReactJS, NestJS, Typescript, Firebase, Tailwind CSS)
- **MovieBuff**: Programmed movie and TV series search functionality for swift API responses, improved website speed, and handled asynchronous API requests with Redux. (Tech-stack: ReactJS, Redux, HTML, SCSS)
- **Sentiment analysis via social media usage**: Devised a Python-based ML model with TensorFlow for depression detection from social media data. Achieved promising results with an 87% F1 score and 94% accuracy, surpassing the Logistic Regression Baseline. (Tech-stack: Python, ReactJS, SQL, NLP, Neural Networks)
- **Text Summarization**: Implemented an end-to-end NLP text summarization system using BERT and HuggingFace API. Fine-tuned BERT for NLP tasks, improving accuracy to 84%, and deployed on AWS EC2 for scalability and security. (Tech-stack: Python, AWS, SQL, NLP, Neural Networks)