

Safwan Mahmood

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EDUCATION

New York University - Courant Institute of Mathematical Sciences

New York, NY

M.S. in Computer Science, GPA: 3.86

Jan 2021- Dec 2022 (Expected).

- Relevant Courses: Adv. Databases, Big Data & Machine Learning, Vision, Cloud Computing, Operating System.

Indian Institute of Technology

Hyderabad, IN

Dual Degree: Bachelors of Technology in Computer Science; Engineering Science.

June 2014 - May 2018

- Relevant Courses: Data Structures & Algorithms, Distributed Systems, Data Science & Data Mining, Deep Learning.

TECHNICAL SKILLS

Languages: C/C++, Python, Java, Scala, Javascript, SQL, GraphQL. (**Parallel Programming**: OpenMP, MPI)

Frameworks: Spark, PyTorch, Scikit-learn, OpenCV, Kafka, Storm, Hadoop, PySpark, NodeJS, Django.

Other Tools and Technologies: ElasticSearch, Cassandra, Airflow, GCP, AWS, NoSQL.

PROFESSIONAL EXPERIENCE

Graduate Software Engineer Intern, Canal, Team: Backend,

June 2022 – Aug 2022, San Francisco, CA

- Built product features for web app using Django and GraphQL for seamless customer and sales experience.
- Engineered features for order and line item insights to enable data driven decisions for data scientists.

Software Development Engineer 2, Walmart Labs, Team: DMAS

Jan 2020 – Dec 2020, Bangalore, IN

- Managed and mentored a team of 3 to handle disaster recovery, stress testing of infrastructure, setting up alerts and monitoring for 5X traffic on display ads services (Storm pipelines) during Walmart's online holiday season sale.
- Led integration of rules engine (RedHat BI tool) into Ads platform enabling instant deployment of rules on offers, cutting down catalog (300+ million offers) refresh time from 36+ hours to less than an hour using ElasticSearch.
- Enabled multiple team access to rules engine by adding user authentication/management features using Keycloak tool.

Software Development Engineer 1, Walmart Labs, Team: SEM

Aug 2018 – Dec 2019, Bangalore, IN

- Redesigned an in-house Ads PaaS from Spark-Batch to Spark-Streaming processing and managed critical points of platform achieving ads publish rate of 300X and reducing alerts/errors by 80%.
- Achieved 4X conversion for underperforming/cold offers and slashed marketing spendings by 20% with a real-time dashboard for 300 million offers with monitoring and alerts.

Machine Learning Engineer Intern, Busigence, Team: Marketing Solutions

May 2017 – Aug 2017, Bangalore, IN

- Devised a framework to solve marketing problems using Inferential Analytics and implemented a module for Review and Corpus Summarization lowering overall time by a factor of 3X, eliminating manual operations.

PROJECTS

Realtime Ambulance Alert - P2P Distributed Network Cloud solution

Jan 2022 – May 2022

- Designed a realtime cloud based solution that facilitates in reducing the ambulance handover delay for EMTs during an emergency using integrated core techniques involving edge computing, P2P network and ML capabilities.
- Used RabbitMQ, BTPeer compute infrastructure with AWS EC2s to simulate behavior and gather insights.

Replicated Concurrency Control and Recovery algorithm in Key-value store

Aug 2021 – Dec 2021

- Implemented a distributed algorithm with replication for a key-value store using available copies approach for replication and two phase locking (using read and write locks) at each site with validation at commit time.
- Avoided deadlocks with the wait-die protocol and optimized read only transactions using multi-version consistency.

Tamper Detection in Images using Deep Learning methods

Aug 2021 – Dec 2021

- Detection of manipulation in images by training CNN with patches extracted from the images using masks on CASIA2.0 dataset. Engineered a 400 dimensional feature vector from fully connected layer of CNN and classifying the features with SVM. Also used fine-tuning on pre-trained models like ResNet, VGG16/19 as feature extractors.
- Enhanced efficiency of algorithm by using augmented images while training, reporting an avg test accuracy of 98.6%.

ACHIEVEMENTS

- Open Source contribution to a tool (Keycloak) in Authentication/Authorization module. Oct 2019
- Soccer team captain; Alumni Cell Relations Manager at IIT-H; Co-founder at HungerTorrent. Aug 2017 – Aug 2018