Jules M.

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6+ yrs expertise spanning Infra/Platforms, Search, **Ads Retrieval** with **NLP**, **GNNs**, Large Scale Recommenders, DevOps achieved by cross-functional collaboration. Proficient in **Python, Java,** Scala; **Spark**, **Kafka**, **Azure** (primary), AWS and GCP cloud services

RELEVANT EXPERIENCE

Contra, Software Engineer, Contract May 2023 – 2024

- Partner with stakeholders to architect solutions based on business logic and implement software that delivers value to customers & partners
- Led a 3-person v-team to ship semantic search feature on a clients's two-sided marketplace platform which projected a 40% improvement in search relevance and a 14% increase in user engagement contributing to a 2024 Q3 growth of 1% in MAU
- Built a real-time segmentation engine leveraging graph analytics and ML, processing over 5 million user interactions daily and enhancing personalized ad delivery, resulting in an 18% increase in user engagement.

Microsoft, Bing Ads & Serving, Bellevue WA,
Applied Scientist II, Aug 2021 – Mar 2023

- Embedding based Ads retrieval at AI Platform Team, [MLOps , Ads Infra, Recommendation, Ranking]
- Built GNN based embedding models **serving 2B** users, 1**B** Msft users & **0.5B** events to personalize ads and for CVR-CTR prediction tasks leveraging user behaviors, Ads features + Ads serving, User+Ads ranking service with TorchServe, **C#, SQL, Java, Spark, Kafka**
- **Spearheaded** key Profile Targeting features 0 to 1: Led devt for regression models that analyze petabyte scale user behaviors to predict user conversion likelihood based on predicted income. Partnered with product, campaign and marketing teams to finalize vNext,
- Led development of embedding store and end-to-end production pipelines running training and inference of v1 Income Targeting Analytics.
- Optimized workflows/pipelines with CI/CD methods reducing token costs by 60% & runtime by 0.5x saving resources significantly. Refactored modules with **Airflow/Aether, PySpark, SparkSQL, Azure Databricks, Datalake, AzureML, Azure Kubernetes**
- Led development for vNext frameworks for running parity analysis and quality checks to ensure 100% accuracy in GNN based embeddings in downstream tasks. Built monitoring and alerting systems resulting in 99% uptime, still in service to date.
  Profile Prediction Model for Multilingual and Multi-country Markets
- Spearheaded embedding store development and applied Graph Neural Network model on users' age prediction. Enabled wide & deep features (text & numerical features) to improve the age prediction accuracy by 3%. Implemented pipelines for daily user profile prediction.

IBM, IBM Z, Poughkeepsie, NY [Backend, CI/CD, Performance & Databases]
Software Developer, Hyper Protect Data Controller at Z/OS Performance Team Oct 2020 – Sep 2021

- Built automated pipelines for running **performance tests** on IBM HPDC vNext resulting in 30%+ faster deploy/integration with **RDBMS** and dBs e.g., **Postgres, MySQL, MariaDB, OracleDB, IBM Db2** leveraging tech stack: **Java, Ansible, Jenkins, Docker, Kubernetes, Terraform**
- Delivered NRT data pipelines providing data from regressive performance workloads run on IBM cloud which is leveraged by GTM strategy business & marketing partners. Designed **Python/Grafana/InfluxDB**, & BI dashboards to visualize timeseries performance datasets.
- Collaborate with development teams to optimize HPDC for data platforms improving performance and resource efficiency by 13%
- Serve as Scrum Leader and actively mentored new developers and interns on the team.

BEDC Electric Plc, Benin, NG [Backend, ML, Data Infrastructure]
Software Engineer, Data Infrastructure at Data Platform Team Nov 2016 – June 2020

- Built and maintain end to end (Near Real Time, & offline) ELT pipelines serving million customers and manage data pipelines running analytics for Energy Billing
- Led 3 cross-functional teams' collaboration (10+ people, 3 stakeholders) including product, platform and engineering to develop and deploy two Personalized pricing offer pilots for maximum demand customers. Built a user ranking algorithm that predicts the top likely customers to exceed prepaid usage quotas & recommend top-up by alerts using **Python, AWS S3, SNS/SQS, CloudWatch, Kubernetes**
- Shipped the WebApp and Django based REST APIs providing access to customer data insights used by client technical officers for tracking deltas in customer energy usage while resolving complaints and running B2C triages using Python**, MySQL, Chart.js, BootStrap, JavaScript.**
- Shipped chatbots using TDIF on FB Messenger with Flask to respond customer complaints for millions in monthly user customer base and managed data ingested into a **NoSQL** database using **MongoDB** Atlas. Support tour migration to Couchbase clusters.
- Analyzed large multi-dimensional time series data, identifying usage patterns and key features to build predictive models which infer anomalies in energy consumption of high reactance customers saving over **$500k** in avoidable costs.
- Successfully mentored interns and onboarded new hires to understand project scope quickly and avoid blockers by working scalably.

EDUCATION & RESEARCH EXPERIENCE

University of Memphis, Master of Science, Major: Computer Engineering, Minor: Electrical Engineering
Courses: Artificial Intelligence, Information Retrieval, Computer Vision, Image Processing, Data Mining, Deep Reinforcement Learning, NLP, NLU
Graduate Research Assistant

- Proposed PySIM: a U-Net model for reconstructing 3D images from 2D layers captured from Structured Illuminated Microscopes
- Built TunableSIM GUI with C++ with Matlab's Engine API for **C/C++** and tested new features. Presented at OSI/COSI/SPIE Conference 2021
- 1st place in 2021 and 2020, at the University Research forum, two years in a row and regularly attended ML conferences.

University of Ilorin, Bachelor of Science Major: Electrical Engineering, Minor: Electronics Engineering
Courses: Algorithms & Data Structures, OOP, Web Mining & Search Engines, Machine Learning, Database Systems, Adv. Statistics, Optimization

Other Projects

- Prototyped vector search capabilities for a client to improve inference from internal documents in databases using FAISS for efficient vector search and BERT for semantic understanding of queries. This resulted in a 15% increase in operational efficiency for analysts & stakeholders