Jules M.

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6+ yrs building high throughputs and low latency systems and models spanning **Ads Retrieval**, **NLP**, **GNNs**, Large Scale Recommenders. Highly collaborative cross-functionally, and proficient in **Python, Java,** Scala; **Spark**, **Kafka**, **Azure** (primary), AWS and GCP cloud services

RELEVANT EXPERIENCE

Contract **Software Engineer, Contra,** San Francisco CA — 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 3%+ in MAU
- Built a **Flask-based** application integrated with **PostgreSQL and Elasticsearch** to automatically ingest competitor pricing data via RESTful APIs every 5 minutes; developed data normalization and visualization routines using Kibana, reducing processing time by 70% and enhancing conversion rates by 15% through actionable market insights
- Spearheaded the automated extraction of pricing data from compliance-related communications data which eliminated the need for manual ticketing and resulted in cost savings of over $200k for a client. Engineered NLP model with Python & Apache Spark on AWS EMR to process data for 100,000+ SKUs; implemented advanced feature engineering and error-handling routines in a distributed computing environment, working closely with data engineers and product managers to improve pricing accuracy by 25% and achieve a 10% revenue uplift.

Microsoft, Applied Scientist II, Bellevue WA — Aug 2021 – Mar 2023

Embedding based Ads retrieval at Audience Intelligence Platform Team

- Built multi-task GNN embedding models serving **2B users**, **1B Microsoft** logged PCs/users & **0.5B events** to personalize ads, for CVR-CTR prediction tasks with user behaviors, Ads features + Ads serving, User+Ads ranking service, DGL, DeepGNN, **C#, SQL, Java, Spark, Kafka**
- Implement transformer (GPT) pipelines generating Ad queries from user's activities. Model coverage is 100M+ active Bing users.
- Developed vNext frameworks for running parity analysis and quality checks to ensure 100% accuracy in GNN user embeddings in downstream tasks. Built monitoring and alerting systems resulting in 99% uptime, still in service to date.

Income Targeting Product & Microsoft Shopping Team

- Spearheaded key Income Targeting feature 0 to 1: developed regression models that analyze petabyte scale user behaviors to predict user conversion likelihood based on predicted income.
- Led development for a real-time user action pipeline that aggregates signals obtained from 1st & 3P Ad partners (views, favorites, purchases) from one-hour sessions, enabling the extraction of rich behavioral patterns for personalized ad targeting
- Integrated dynamic user representation into sponsored search CTR and PCCVR ranking models via a deep and cross (DCN) interaction module -with offline ROC-AUC of +2.66% for CTR, +2.42% for PCCVR, and ablation studies showing 1.17% ROC-AUC drop without DCN
- Optimized distributed training strategies for multi-GPU environments, reducing model training time by 40% and enabling faster iteration cycles. Leveraged Horovod with TensorFlow to implement data parallelism and ensure efficient resource utilization

Profile Prediction Model for Multilingual and Multi-country Markets

- Maintain ensemble models: SVM (Age v1) + GNN based embedding models (Age v4) to predict missing users age from user behaviors and Microsoft graph for demographic targeting. Enabled wide & deep features (text & numerical features) to improve the age prediction accuracy by 3%. Implemented pipelines for daily user profile prediction.
- Partner with cross-functional teams: including Engineering, Product and Campaign teams, statisticians, and economists, to build robust systems that elevate ad intelligence capabilities across Microsoft DMP and Audience Intelligence tools.

IBM, Software Developer, Poughkeepsie, NY — Oct 2020 – Sep 2021

Hyper Protect Data Controller at Z/OS Performance Team, IBM Z,

- Built automated pipelines for running **performance tests** on IBM HPDC vNext resulting in 30%+ faster deploy/integration with **RDBMS** and dBs variants like **Postgres, MySQL, MariaDB, OracleDB, IBM Db2** leveraging **Java, Ansible, Jenkins, Docker, Kubernetes**
- 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, **Software Engineer,** Benin, NG — Nov 2016 – June 2020

Customer Data Infrastructure at Platform Team

- Built and maintain end to end Near Real Time & offline pipelines serving 5 million customers across (27) business districts to ingest customer usage and run analytics which is leveraged for Energy Billing with **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, JavaScript.**
- 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
- Shipped initial v1 chatbots with Flask on BEDC Electricity Plc customer homepage.to respond customer complaints for millions in monthly user customer base and managed data ingested into a **NoSQL** database using **MongoDB** Atlas. Supported 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.

EDUCATION & RESEARCH EXPERIENCE

Tennessee Wesleyan University, Master in Business Administration, — Concentration: Data Analytics

Courses: Data Security & management, Data Visualization, Business Management practices, Project Management, International Policies

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
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, DatabaseSystems, Adv. Statistics, Optimization