

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

- 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, **1B** 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.
- Led development for a real-time user action pipeline that aggregates signals obtained from 1st & 3P Ad partners(views, favorites, cart-adds, purchases) from one-hour shopping sessions, enabling the extraction of rich behavioral patterns for personalized ad targeting
- Engineered an adSformer Diversifiable Personalization Module (ADPM) by integrating three synergistic components: a custom adSformer encoder with global max pooling for salient feature extraction, pretrained multimodal embeddings using EfficientNetB0 for visual and textual signals, and on-the-fly learned representations to capture ephemeral user interests.
- Integrated dynamic user representation from ADPM into the sponsored search CTR and PCCVR ranking models via a deep and cross (DCN) interaction module—resulting in offline ROC-AUC improvements of +2.66% for CTR and +2.42% for PCCVR, with ablation studies showing a 1.17% ROC-AUC drop when the DCN was removed.
- 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