

WeiQi Weng

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EDUCATION

Northeastern University, Boston, MA

Master of Science in Computer Science

GPA: 3.875/4.0

Sept 2015 - Dec 2017

Teaching Assistant of Data Mining Techniques/Unsupervised Learning

Sept 2017 - Dec 2017

East China Normal University, Shanghai, China

Bachelor's Degree in Mathematics and Applied Mathematics

Sept 2011 - July 2015

TECHNICAL KNOWLEDGE

Language: Python, C/C++, JavaScript, R, Java, Scala

Database: MySQL, MongoDB, Google BigQuery, PostgreSQL, Vertica

Web: React, AngularJS, Node.js, D3.js, Express, HTML, CSS, jQuery, Bootstrap, PHP

Software: PyCharm, RStudio, Visual Studio, Eclipse, WebStorm, Matlab, SPSS, DBeaver

WORK EXPERIENCE

Wayfair LLC

Senior Data Scientist, Sort Optimization

Boston, MA

Feb 2021 - Present

- Combined customer engagement predictions from personalization-based and product-property-based models with gross-revenue estimation to sort product grids and generated significant estimated incremental gross revenue in A/B test
- Developed online parameter optimization platform based on Bayesian Optimization and applied to gross-revenue-awared sorting algorithm

Senior Data Scientist, Personalized Recommendation Ranking

Boston, MA

Aug 2019 - Feb 2021

- Performed layer-granular pruning technique on current DNN ranking model, collaborated with Neural Magic group to apply quantization, built inference engine and achieved 5.76x inference speed-up in production
- Expanded personalized ranking to display promoted/sales products in all types of marketing emails and contributed significant estimated incremental gross revenue
- Couched an intern to develop an architecture optimization pipeline for the DNN ranking model based on Bayesian Optimization and upgraded the recommendation ranking algorithm to RankNet/LambdaRank and achieved 0.12 gain in nDCG

Data Scientist, Recommender System

Boston, MA

Jan 2018 - Jul 2019

- Trained siamese deep-and-wide networks, with Google Inception ResNet V2 and single-layer neural network as the deep and wide part respectively, to learn a latent space through customized contrastive loss where products stylistically similar and matching in side-information are closer to each other (tech blog: <https://www.aboutwayfair.com/tech-innovation/recnet-deep-learning-based-cross-class-recommendations-at-wayfair>)
- Boosted training pipeline to feed the model images and side information such as price, rating and product description text embeddings by implementing batch iterator which maintains a queue for CPU workers to load, preprocess and push augmented data with OpenCV and GPUs to consume, and decreased 13% training time on a NVIDIA P100 GPU machine
- Fine-tuned transfer learning split within Inception ResNet V2 and the model's own layers, optimized model generalization by class-weighted sampling plus cyclic learning rate, and designed unit test suite
- Deployed an Airflow DAG generating product embeddings every week to cache recommendations fetched through rapid approximate nearest neighbor search facilitated by Hierarchical Navigable Small World graph in carousels across the Perigold brand, and gained significant relative lifts in add-to-cart rate, conversion rate and engagement traffic

CARDINAL CONSULTING LLC

Full Stack Engineer (part time, remote), Sports Analytic Platform Boston, MA Jan - Mar 2018

- Created React components to present NBA team and player game-granular dashboards, gauges and Cardinal's featured reports
- Implemented Node.js server-side services to fetch statistics like points, mechanical intensity, physio load and Hollinger's PER preprocessed from PostgreSQL database
- Incorporated D3 functionality to visualize team or player's statistics through bar chart, line plot and animated bubble plot, and added feature to run linear regression based on ordinary least square

Wayfair LLC

Data Scientist Co-op, Display Retargeting Boston, MA Jan - July 2017

- Established an Airflow DAG to fetch Wayfair Display Retargeting and Real Time Bidding cost on Facebook through Facebook Marketing API
- Independently developed a decision-making support software in Python MVC with an Elasticity-based Optimization Model integrated to recommend new bid based on customer segments and Display Product Ad tag configuration, and freed the whole display retargeting team from extremely manual operations
- Automated the bidding process for display retargeting team through Jenkins pipeline according to decision-making support software return, ran online tests on 12 Display Product Ad tags and lowered ACNR to 17% on average

ACADEMIC PROJECTS

Deep Learning Project Boston, MA July 2017 - Present

- Implemented Fully Convolutional Network with VGG16 frontend to run semantic segmentation on Pascal VOC 2012 dataset and achieved 79.8% pixel accuracy plus 52.3% mean IoU while the implemented Dilated Convolutional Network scored 78.2% pixel accuracy and 49.7% mean IoU
- Architected YOLO V2 with VGG16 basis to apply object detection on Pascal VOC 2012 dataset
- Trained an Inception-V4-like Convolutional Neural Network on a subset of Open Image Dataset for image classification, achieved 85.4% on test subset, built OpenVINO inference module of the CNN, and got 78.9% test accuracy but 1.5x inference speedup
- Developed Siamese and Triplet Inception ResNet V2 to learn metric space for Caltech-256 image sets, generated embeddings for objects covered in Caltech-256, and implemented a visual search feature

Everbridge Co-op Project

A Regression View of Everbridge Mass Notification Service Boston, MA Sept - Dec 2016

- Cleaned and extracted data of notification configuration, contacts' system setting and their background followed by Exploratory Data Analysis
- Trained a Softmax Regression model to predict whether a notification will be confirmed, confirmed late or not confirmed and then tuned a Multiple Regression model to predict the time for a notification to be confirmed
- Quantified the effect of path type, number of registered contact paths, batch size, contacts' region and notification configuration in terms of final confirmation status and confirmation time to better support notification configuration decision making

CERTIFICATIONS

Passed CFA Level 2 exam

Aug 2021