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in linkedin.com/in/zexihan

🐙 github.com/zexihan

# Zexi Han

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## EDUCATION

**Northeastern University**                                                                                           Boston, MA

*M.S. in **Data Science**, GPA: 3.8*                                                                      Jan 2017-May 2019

   *Relevant Courses:* Algorithms, Machine Learning (TA), Web Development, Computer Vision, Parallel Data Processing

**Beijing University of Posts and Telecommunications, Joint Program with QMUL**                  Beijing, China

*B.S. in **Telecommunications Engineering** with the First Class Honors, GPA: 3.5*              Sept 2012-Jun 2016

   *Relevant Courses:* Data Structures, Software Engineering, Calculus, Linear Algebra, Principles of Communications

   *Awards:* Outstanding Final Project (Rank 12/680)

## TECHNICAL SKILLS

| | |
|---|---|
| **Languages:** | C++, Python, Java, JavaScript, Typescript, HTML, CSS, SQL, R, MATLAB |
| **Web App Dev:** | React, Redux, Angular, Bootstrap, jQuery, Node.js, Express, Spring Boot, JPA, MongoDB, mongoose |
| **Tools:** | MapReduce, AWS, OpenCV, PCL, Pandas, scikit-learn, Tensorflow, PyTorch, Docker, three.js, Git |

## PROFESSIONAL EXPERIENCE

**Software Engineer at Suning Commerce R&D Center – Applied AI, Palo Alto**                  Aug 2019-Present

• Led applied research on pedestrian detection, tracking, and pose estimation algorithms based on 3D deep learning for automated convenience stores.

• Proposed point cloud synthetic augmentation method to improve the performance of the 3D object detection models.

• Optimized real-time point cloud processing algorithms multi-threaded in C++ on CPU and paralleled in CUDA on GPU.

**Data Scientist Co-op at Rue Gilt Groupe – Reseller Identification, Boston**                  Jan 2018-Jun 2018

• Worked on feature engineering and XGBoost model training from an iterative perspective to identify resellers from over 2 million buyers, and put it into production to provide them with personalized boutique recommendations.

• Built docker apps for feature extraction, training and inference which were deployed to Amazon ECS and Airflow.

• Maintained daily ETL process for the recommendation system with robust SQL on Snowflake.

**Research Assistant at National Laboratory of Pattern Recognition – Visual Search, Beijing**      Aug 2015-May 2016

• Designed and built a Three-stage Hybrid Visual Search Framework (Classification, Object Detection and Matching) to the task of same-style product image retrieval with convolutional neural networks.

• Compared the performances of multiple CNN backbones on Taobao 5M commercial product images using Caffe.

## PROJECT EXPERIENCE

**Self-Driving Car Engineer Nanodegree Program, Udacity**                                       Jan 2020-Present

**TripElf – Interactive-Map with Neighborhood-Level Airbnb Review Summarization, NU**          Jan 2019-Apr 2019

• Proposed and developed an application to help travelers pick their favorite short-term rental neighborhoods before traveling by demonstrating the machine-generated overviews of the neighborhoods.

• Explored and applied various text models, such as KL-Sum, LDA-Sum and ELMo, to summarize Airbnb reviews and generate neighborhood overview from travelers' point of view.

• Implemented an interactive-map web app in React and Mapbox GL JS for data visualization, drawing travelers a vivid picture of NYC neighborhoods from the aspect of recreation, transit, noise, safety, expense, and Airbnb host.

**TuneS – Social Music Website, NU**                                                           Jan 2019-Apr 2019

• Developed a SPA using MERN stack and Spotify Web API that serves for music fans to engage with other music lovers and discover new songs and artists.

• Handled OAuth authorization, like/share/follow functions with a RESTful API built in Express and MongoDB back-end.

• Designed and wrote a responsive and interactive React front-end utilizing Bootstrap and AJAX techniques.

**Parallel Matrix Multiplication in MapReduce, NU**                                            Oct 2018-Dec 2018

• Studied and implemented the different parallelization mechanisms for large matrix multiplication in MapReduce, including Horizontal-Vertical Partitioning and Vertical-Horizontal Partitioning for synthetic dense and sparse matrices.

• Measured and compared speedup and scalability performance for the two intelligent partitioning methods on Amazon EMR and S3 with different settings of the cluster.