# Zheng Huang

Phone: 434-328-0876 · Email: zh4zn@virginia.edu · Website

## Education

**University of Virginia** *Aug 2019 - Dec 2021*

Master of Computer Science, major GPA: 3.95/4.00 *Charlottesville, VA, United States*

- Coursework: Machine Learning, Vision & Language, Graph Mining, CPS: Formal Methods, Operating System

**University of British Columbia** *June 2018 - August 2018*

UBC Visiting Student, Department of Electrical and Computer Engineering *Vancouver, BC, Canada*

**Hebei University of Technology** *Sept 2015 - June 2019*

Bachelor of Computer Science, major GPA: 87/100 *Tianjin, China*

## Industry Experience

**Amazon, Alexa Speech Recognition** *Mar 2022 - Present*

*Machine Learning Engineer*

- Developed Federated Learning (FL) systems to preserve users' privacy and improve the quality of speech recognition models
- Worked on a team and delivered an on-device FL Recurrent Neural Network Transducer prototype that is capable of extracting learning from the audio without relying on sending users voice recordings to the cloud
- Conducted in-depth investigation on decentralized machine learning, privacy-preserving and AWS infrastructure

## Research Experience

**Empowering Next POI Recommendation with Multi-Relational Modeling** *Sep 2020 - Jul 2021*

*Research Assistant, advised by Professor Jundong Li*

- Studied on Points of Interests (POI) recommendation by capturing the influence of multiple relations
- Utilized multiple Graph Convolutional Networks (GCNs) with Self-Attention mechanism to capture multiple user-user social relations (family or colleague) and user-location check-in relations
- Adopted coupled Recurrent Neural Networks (RNNs) to capture the mutual influence between users and POIs over time
- Conducted in-depth research on recommender system, sequential recommendation and Graph Convolutional Networks

**Assessing the Causal Impact of COVID-19 Related Policies on Outbreak Dynamics** *Sep 2020 - Mar 2021*

*Research Assistant, advised by Professor Jundong Li*

- Studied on the causal effect of different policies in reducing the spread of COVID-19 in the US
- Worked on a team and developed a neural network framework (GCNs&RNNs) based on time-varying observation data to control the influence of confounders, and integrated data from different data sources
- Investigated the problem of causal inference and COVID-19 observational social network data

## Publication

- **Zheng Huang**, Jing Ma, Yushun Dong, Natasha Zhang Foutz and Jundong Li, "Empowering Next POI Recommendation with Multi-Relational Modeling"
  Special Interest Group on Information Retrieval (SIGIR 2022), Arxiv
- Jing Ma, Yushun Dong, **Zheng Huang**, Daniel Mietchen and Jundong Li, "Assessing the Causal Impact of COVID-19 Related Policies on Outbreak Dynamics: A Case Study in the US"
  International Conference on World Wide Web (WWW 2022), Arxiv

## Programming

- Programming in Python/Java/C++/C/R/Javascript/HTML/CSS/SQL/MATLAB
- Skillful in PyTorch/TensorFlow/Scikit-learn/Latex

## Others

- **Awards**: Top Academic Fellowship (2016, 2017, 2018)
- **Reviewer**: AMLC (Amazon Machine Learning Conference)'22
- **External Reviewer**: PAKDD'21, WSDM'21
- **Interests**: Guitar, Piano, Driving