

**EDUCATION** University of Washington - *MS Computational Linguistics* 06/2018-06/2020 3.87/4  
Rensselaer Polytechnic Institute - *BS Computer Science* 08/2011-05/2015 3.43/4

**WORK EXPERIENCE** *Product Manager 2*-Microsoft Research & AI, Bing 11/2017-Present

- Architected relevance metrics stack into a realtime streaming system through new human labeling tasks, novel data sampling methods, and metrics aggregation. Labeling scaled to \$7m/year across 16 markets generating more than 1,000,000 judgments a week. The pipeline went from measuring user experience years old to seconds old. To scale the pipeline created a novel multi class-stratified sampling method using the Horvitz-Thompson estimator, work under review.
- Built family of MSMARCO Datasets and baselines including QnA, Passage Ranking, and Keyphrase Extraction, which collectively have been used by over 3000 Researchers. Papers Cited over 250 times and competitive leaderboards with over 200 research submissions. Dataset creation using Pandas and baselines models built in Pytorch and Tensorflow.
- Research and analyzed search relevance and user experience for the executive team across various verticals, languages, and metrics using language embeddings, sampling methodologies, and classification methods. Analysis and visualization done through tSNE, Pandas, Numpy, ANNOY, and Plotly

*Product Manager 2*-Microsoft Cloud + AI, Global Services 05/2016-11/2017

- Designed, built, and deployed Neural Machine Translation(NMT) into a software localization pipeline all Cloud and Enterprise Microsoft products. Using the NMT models, supplier contracts were renegotiated, saving 20% annualizing to \$3m/year over the next three years.
- Optimized and scaled the NLP system for customer feedback translation, filtering, and categorization, decreasing team effort by 80% using NLTK, Tensorflow, and sci-kit-learn.
- Drove end to end localization and internationalization for Azure and Visual Studio products, including automation, bug triage, budgeting, vendor, and release management for \$4m/year worth of translations.

*Product Manager*-Microsoft, Azure RemoteApp Summer 2014 & 08/2015-05/2015

- Designed scalable multi-cloud network architecture for cloud-based Remote Desktop Service and drove large scale deployment to alpha customers and Microsoft.

*NLP Researcher*-Basis Technology 01/2014-05/2014

- Rearchitected the systems machine-learned architecture to state of the art neural methods, which improved multilingual accuracy to English parity.
- Formalized data creation, data ingestions, retrieval, formatting, and analysis pipeline using Bash, Java, and Python primarily. Optimized models were ANN, KNN, SVMs, LSTMs, and Decision Trees.

**Publications, Patents, and Awards**

- MS MARCO: A Human Generated Machine Reading COMprehension Dataset- Neurips 2016,2018
- Open Domain Web Keyphrase Extraction Beyond Language Modeling-EMNLP-IJCNLP 2019 Oral Presentation
- Experiments in Inferring Social Networks of Diffusion
- Keyphrase Extraction Beyond Language Modeling - U.S. Appln. No. 16/460,853
- RPI 2014 Business Model Competition 1st place