

EDUCATION

M.S., Computer Science, **New York University**, NY, USA (2011 to 2013) **GPA: 3.80/4**
B.S., ECE, **Donghua University**, Shanghai, China (2005 to 2009)

PROFESSIONAL EXPERIENCE

Microsoft Bellevue, WA USA 03/2017 – Current

- **Research SDE II**

Knowledge graph (KG) team research engineer which serves for Bing.com entity card and Cortana natural language understanding module.

Build ontology mapping from/to Schema.org.

Extending semantic linking for entities to multiple enrichment context support.

IBM Watson Yorktown Heights, NY USA 03/2016 – 03/2017

- **Staff Software Engineering Researcher**

Lead a team to enhance the medical problem detection system.

Trained ensemble-model to detect the potential problem and built metrics evaluation system.

Convert raw NLP feature space to vector representation, chi-square feature selection for categorical variables.

Optimized patient problem list identification system with decision tree model.

Research Conv NN for Problem List Generation.

IPsoft Inc. New York, USA 11/2013 – 03/2016

- **Lead NLP R&D Engineer**

Lead a team to build a complex Sentence Similarity computing system using word distributed representation.

Transition-based entity recognition and entity linking to freebase.

Developed noun recognition system with Bayesian graphical models, also a comparison CRFs model.

Feature engineering in dialog act recognizer with SVM model.

~30% accuracy improvement on original dialogue scripts for 82 related topics.

Developed rule based co-referencing recognizing in Semantic Role Understanding System.

Implemented CRFs Named Entity Tagger to AI Interactive system with word embedding.

Implemented an adapter layer for Stanford Parser to accept CoNLL-U format training data.

Developed and optimized IPsoft specific model for Stanford PCFG and shift-reduced Parser.

ByteConsulting Inc. New York, USA 06/2013 – 09/2013

- **Application Developer**

Developed PhoneGap E-Market financial mobile application with REST-ful web service provider.

PUBLICATION

- Qingqing Cai, James Gung, Maochen Guan, Gerald Kurlandski and Adam Pease (2016).

Word Substitution in Short Answer Extraction: A WordNet-based Approach, in Proceedings of the Eighth Global WordNet Conference, Verginica Barbu Mititelu, Corina Forascu, Christiane Fellbaum, Piek Vossen (eds), pp 66-73

PROJECT EXPERIENCE

- **Feature Extraction Optimization for Multicore Architecture** 12/2012

Concurrency Programming: Parallel feature extraction process for NLP. (Java 1.7.0)

Data level parallelism in training process (Thread Pool Model).

Profiling and optimize the CKY for parsing process.

TDD + JUnit test coverage.

• **Natural Language Processing: Sentence Sentimental Analysis** 04/2012 to 05/2012

Supervised Machine Learning Classification System. (Java 1.6.0)

Target: Classify tweet's sentiment extracted from twitter.com into Positive, Negative or Neutral.

Approach: Maximum Entropy classifier (Grammatical Model) + Bigram (Lexical Model backup) for prediction.

Self-defined feature extraction.

F1-Score: 88% (~5000 Training Samples, 10-fold Cross Validation).

Demo: <http://www.tweetemotion.com>

SKILLS

- Java, Matlab, Python, C#.
- Natural Language Processing, Machine Learning.
- OO Design Pattern, Agile Development, TDD.
- Git, Subversion, Maven/Gradle, Jenkins.

INTERESTS

- Attention based models
- Word Embedding
- Recurrent/LSTM based NLP sequence prediction

GitHub

<https://github.com/maochen>