

Mingbo Ma

CONTACT INFORMATION	2048 Kelley Engineering Center Corvallis, OR, 97331	Email: cosmmb@gmail.com Web: mingboma.com
RESEARCH INTERESTS	Machine Learning based Natural Language Processing Algorithms, especially Neural Networks based models for the applications in Machine Translation, Document Summarization, Image Captioning, Sentimental Analysis, Sentence Classification and Question Answering.	
EDUCATION	Oregon State University , Corvallis, OR, USA <i>Ph.D student in Computer Science</i> The Graduate Center at CUNY , New York, NY, USA <i>Ph.D student in Computer Science</i> Advisor: Liang Huang	Sep. 2015 – present June. 2013 – Aug. 2015
	Northeastern University , Boston, MA, USA <i>Ph.D student in Electrical Engineering</i> State University of New York at Buffalo , Buffalo, NY, USA <i>Ph.D student in Computer Science</i> Advisor: Yun (Raymond) Fu	Sep. 2012 – May 2013 Jan. 2012 – Aug. 2012
	Florida Institute of Technology , Melbourne, FL, USA <i>Master of Science in Electrical Engineering</i> Advisor: Georgios C. Anagnostopoulos Thesis: “Kernel-based Sammon Mapping for Dimensionality Reduction & Data Visualization”	Aug. 2008 – May 2010
	Jilin University , Changchun, Jilin, China <i>Bachelor of Science in Telecommunication Engineering</i>	Aug. 2004 – July 2008
RESEARCH EXPERIENCE	Oregon State University / The Graduate Center at CUNY <i>Research Assistant</i> Topic: <i>Deep Learning algorithm for Sentiment Analysis and Question Answering</i> <ul style="list-style-type: none">• Dependency tree-based Convolutional Neural Networks for sentiment and sentence classification.• Proposed Convolution based model for Question Answering.• Models used for NLP analysis includes Recursive, Recurrent, Convolutional Neural Networks and Long Short Term Memory. Topic: <i>Neural-based Natural Language Generation</i> <ul style="list-style-type: none">• Proposed a set of attention regularizations for guiding more accurate attention weights for abstractive summarization.• Proposed a new reader-writer memory-based abstractive summarization model.	June. 2013 – present Supervisor: Liang Huang
	SUNY Buffalo / Northeastern University <i>Research Assistant</i> Topic: <i>Locality Constraint Subspace Learning</i> <ul style="list-style-type: none">• Proposed a model for sparse graph embedding with locality sparse coding constraint.• Formulate a model to choose the neighborhood for each locality automatically.• Build the sparse graph embedding for face within each locality. Topic: <i>Low-Rank Outlier Detection for Manifold Learning</i> <ul style="list-style-type: none">• Proposed a low-rank description for manifold learning.• Proved each locally area of manifold can be approximated by a low-rank matrix in theory.	Jan. 2012 – June 2013 Supervisor: Yun (Raymond) Fu

Topic: *Prototype Based Feature Learning*

- Proposed a prototype formation on image set for discriminative feature representation.
- Use prototype image sets as common reference to represent any image set.
- Proposed to use normal face to capture the discriminative information.

Topic: *Relative Max-Margin Feature Learning*

- Proposed a model to learning the max-margin feature relatively through reference basis.
- Adopted the traditional image classification pipeline to our model.

Florida Institute of Technology

Aug. 2008 – May 2010

Research Assistant

Supervisor: Georgios C. Anagnostopoulos

Topic: *Kernel-based Sammon Mapping for Metric Representations*

- Proposed a generalization of Sammon’s mapping.
- Formulate projections as linear combinations of appropriate kernel functions.
- This approach subsumes the classical Sammon mapping, Radial Basis Function, Multi-layer Perceptron based approach as special cases.

Research Experiences for Undergraduates (REU) Program

May 2009 – Aug. 2009

Graduate Mentor and Team Lead

Supervisor: Georgios C. Anagnostopoulos

- Team lead, give a guidance of research and offer a theorem support.
- Finished a technique report.
- A demo relates to Multidimensional Scaling technique was created by GUI in matlab.

INDUSTRIAL
EXPERIENCE

Apple Inc., Cupertino, CA, USA

June 2017 – Sep 2017

Research Intern in NLP Core Technologies

Work on various of neural-based NLP models on IOS and MacOS systems.(details are omitted based on company’s policy)

Managers: Vivek Kumar Rangarajan Sridhar

IBM T.J. Watson Research Center, Yorktown Heights, NY, USA

June 2016 – Sep 2016

Research Intern in Cognitive Analytics and Deep Learning Group

Proposed a set of attention regularizations to make the attention between source and target sides more accurate for summarization.

Proposed a new neural-based summarization model.

Mentor: Ramesh M. Nallapati **Managers:** Bing Xiang & Bowen Zhou

Authentec Inc.(acquired by Apple Inc. in 2012), Melbourne, FL, USA

May 2010 – Jun 2011

Algorithm Engineer

Developed imaging algorithms to enhancement for finger detection, fingerprint image and reconstruction performance, The techniques relate to image processing, metric analysis, real time signal processing and filter design.

Mentors: Michael Boshra & Qiang Liu

PUBLICATIONS

Mingbo Ma, Dapeng li, Liang Huang and Kai Zhao “OSU Multimodal Machine Translation System Report”, WMT 2017 competition on multimodal translation. *We achieved the **best TER score** among 15 systems on the English+Image → German on COCO task (the hardest task in that competition, since it’s into German rather than French, and tested on out-of-domain images).*

Liang Huang, Kai Zhao and **Mingbo Ma** “When to Finish? Optimal Beam Search for Neural Text Generation”, EMNLP 2017.

Mingbo Ma, Liang Huang, Bing Xiang and Bowen Zhou “Group Sparse CNNs for Question Classification with Answer Sets”, ACL 2017.

Mingbo Ma, Kai Zhao, Liang Huang, Bing Xiang and Bowen Zhou “Joint Sequential Labeling and Classification by Sparse Attention Neural Networks”, Interspeech, 2017.

Ramesh Nallapati, Bowen Zhou and **Mingbo Ma**, “Classify or Select: Neural Architectures for Extractive Document Summarization”, arXiv, 2016.

Kai Zhao, Liang Huang and **Mingbo Ma**, “Textual Entailment with Structured Attentions and Composition”, COLING, 2016.

Mingbo Ma, Liang Huang, Bing Xiang and Bowen Zhou, “Dependency-based Convolutional Neural Networks for Sentence Embedding”, ACL, 2015.

Ming Shao, **Mingbo Ma**, and Yun Fu, “Low-Rank and Sparse Modeling for Visual Analysis”, *Sparse Manifold Subspace Learning*, Springer, 2014.

Mingbo Ma, Ming Shao, Xu Zhao and Yun Fu, “Prototype Based Feature Learning for Face Image Set Classification”, *International Conference on Automatic Face and Gesture Recognition*, 2013.

Mingbo Ma, Ryan Gonet, RuiZhi Yu and Georgios C. Anagnostopoulos, “Metric Representations of Data via the Kernel-based Sammon Mapping”, *IEEE International Joint Conference on Neural Networks (IJCNN)*, 2010.

Qian Ma and **Mingbo Ma**, “Broadband Amplifier Gain Slope Equalization Filter”, In *Proceedings of the 2008 Progress In Electromagnetics Research Symposium (PIERS)*, 2008.

TEACHING
EXPERIENCE

Deep Learning, Oregon State University, Winter 2017

Algorithms, Oregon State University, Fall 2016

Deep Learning, Oregon State University, Winter 2016

Theory of Computation, Oregon State University, Fall 2015

Software Engineering, Queens College, CUNY, Spring 2015

Introduction to Computers and Computation, Queens College, CUNY, Fall 2014