TUAN M. LAI

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EDUCATION

Purdue University *2018 - 2020*
MSc in Computer Science · GPA: 3.9/4.0

Korea Advanced Institute of Science and Technology (KAIST) *2013 - 2017*
BSc in Computer Science · GPA: 3.96/4.3 · Department Rank: 1/37

EXPERIENCE

Adobe Research (San Jose, US) *May 2019 - Dec 2019*
Natural Language Processing Research Intern

- Developed a novel gated self-attention memory network for question answering. It achieved state-of-the-art results on the TrecQA and WikiQA datasets. The work was accepted to EMNLP 2019.
- Developed a simple but effective model for dialog state tracking. The model achieves state-of-the-art results on the WoZ 2.0 dataset. The work was submitted to ICASSP 2020 and published on arXiv.
- Explored various techniques for compressing the BERT model. Filed a patent for the work.
- Built a 'drag-and-drop' framework that enables Adobe researchers to train state-of-the-art natural language understanding models specific to their needs.
- Built a fully functional multimodal image-search engine. Given a text query, the engine returns images that are semantically relevant.
- Deployed APIs for various NLP tasks including named-entity recognition and text classification.

Kihara Bioinformatics Laboratory, Purdue University *January 2019 - May 2019*
Research Assistant

- Developed various deep learning models for protein angle prediction [1] and protein contact prediction[2].
- Developed a deep learning model for protein shape retrieval. The model achieved the best performance in the SHREC 2019 Protein Shape Retrieval contest.

Adobe Research (San Jose, US) *September 2017 - May 2018*
Data Science Research Intern

- Developed the frontend and the backend of a mobile-based intelligent shopping assistant. An in-store user only needs to take a picture or scan the barcode of a product of interest and then can talk to the assistant about the product.
- Developed various question answering and information retrieval models using deep learning. Built many web applications to showcase the models to researchers and product teams at Adobe.
- Published many research papers (COLING 2018, NAACL 2019, IEEE CG&A 2019). Filed one patent.

Google (Mountain View, US) *May 2017 - August 2017*
Softare Engineering Intern

- Developed deep learning models for extracting measurements and currencies from web documents.
- Improved the workflow for generating training data for the models.
- Performance Rating: Superb.

[1] `https://github.com/laituan245/Protein-Angle-Prediction`
[2] `https://github.com/laituan245/Protein-Contact-Prediction`

Raydar - (Vietnam) *January 2017 - March 2017*
Search Engineer Intern

· Set up and maintained the operation of the Elasticsearch clusters of an image search engine.
· Worked with the team to implement and gauge the performance of search algorithms.
· Crawled high-quality free photos from the Internet.

Google (London, UK) *June 2016 - September 2016*
Software Engineering Intern

· There were two errors, each occurring at least a million times per day in the Android Google Search App. I implemented new information cards that show up when the errors occur and assist the users in resolving the errors. The implemented information cards have been fully launched in production.

PATENTS

Utilizing a gated self-attention memory network model for predicting a candidate answer match to a query (Patent Filed 9/2019)

Generating and utilizing classification and query-specific models to generate digital responses to queries from client devices (Patent Filed 4/2018)

JOURNALS

Sugeerth Murugesan, Sana Malik, Fan Du, Eunyee Koh, **Tuan Manh Lai**. *DeepCompare: Visual and Interactive Comparison of Deep Learning Model Performance.* IEEE Computer Graphics and Applications 2019.

RIGOROUSLY REFEREED CONFERENCE PAPERS

Tuan Manh Lai, Quan Hung Tran, Trung Bui, Daisuke Kihara. *A Simple but Effective BERT Model for Dialog State Tracking on Resource-Limited Systems.* ICASSP 2020.

Tuan Lai *, Quan Hung Tran *, Trung Bui, Daisuke Kihara. *A Gated Self-attention Memory Network for Answer Selection.* EMNLP 2019.

Tuan Manh Lai, Trung Bui, Sheng Li. *A Review on Deep Learning Techniques Applied to Answer Selection.* COLING 2018.

Quan Hung Tran, **Tuan Manh Lai**, Gholamreza Haffari, Ingrid Zukerman, Trung Bui, Hung Bui. *The Context-dependent Additive Recurrent Neural Net.* NAACL HLT 2018.

OTHER CONFERENCE/WORKSHOP PAPERS

Ilja Gubins,,, **Tuan Manh Lai**,,, Fa Zhang (many authors). *Classification in Cryo-Electron Tomograms.* Eurographics Workshop on 3D Object Retrieval 2019.

Florent Langenfeld,,, Daisuke Kihara, **Tuan Manh Lai**,,, Matthieu Montes (many authors). *Protein Shape Retrieval Contest.* Eurographics Workshop on 3D Object Retrieval 2019.

Tuan Manh Lai, Trung Bui, Nedim Lipka, Sheng Li. *Supervised Transfer Learning for Product Information Question Answering.* IEEE ICMLA 2018.

Tuan Manh Lai, Trung Bui, Sheng Li, Nedim Lipka. *A Simple End-to-End Question Answering Model for Product Information.* ACL workshop on Economics and Natural Language Processing 2018.

Cuong Van Vu Nguyen, **Tuan Manh Lai**, Duong Anh Nguyen, Okjoo Choi. *CodingGame: A Platform to Learn Programming via Games*. Korea Computer Congress 2017.

Sukhwan Jung, **Tuan Manh Lai**, Aviv Segev. *Analyzing Future Nodes in a Knowledge Network*. IEEE International Congress on BigData 2016.

PROFESSIONAL SERVICES

Reviewer for AAAI, ICMLA

ICMLA 2018 Sessions Chair: Machine Learning Applications and Advances in Deep Learning

VietAI Tech Talk 3 Speaker

MaSSP (Math and Science Summer Program) 2018 Machine Learning Mentor.

HONORS AND AWARDS

Purdue Ross Fellowship (2018 - 2019)

KAIST Undergraduate Full Scholarship (4 years) (2013 - 2017)

KCAMP Scholarship (1 million KRW) (2016)

Kumho Asiana Scholarship (4 million KRW) (2014)

KSA (Korea Science Academy) High School Full Scholarship (3 years) (2010 - 2012)

Second Prize in Informatics for Middle School Students of Hanoi city (2009)