

Tung Tran – Curriculum Vitae

Contact Information	http://tttran.net ✉ tung@tttran.net ☎ 859-475-2884
Locality	Resident of the Tampa Bay area in Florida. US Citizen.
Research Interests	Machine Learning; Deep Neural Networks; Natural Language Processing; Information Extraction; Biomedical Informatics; Image Classification & Analysis
Education	Ph.D. in Computer Science , University of Kentucky, Lexington, KY, USA 2014–2020 ↳ Dissertation Advisor: Ramakanth Kavuluru, Ph.D. <ul style="list-style-type: none">• Dissertation: “Deep Neural Architectures for End-to-End Relation Extraction”• Graduated with G.P.A. of 4.0 out of 4.0 B.S. in Computer Science , University of Kentucky, Lexington, KY, USA 2010–2014 <ul style="list-style-type: none">• Graduated Cum Laude with G.P.A. of 3.5 out of 4.0
Professional Experience	AI/NLP Engineer , Cyber & Information Warfare Division, IDS International 08/2020–Present <ul style="list-style-type: none">• Developed methods for automatic content generation, for the purpose of social media environment replication, including face generation and natural language text generation• Developed methods for social media content analysis including automatic spam detection, bot detection, and image object recognition
Research Experience	Graduate Research Assistant , Biomed. Informatics Institute, University of Kentucky 2016–2020 <ul style="list-style-type: none">• Developed methods for predicting mental conditions based on narratives from clinical notes• Developed methods for end-to-end relation extraction from free text in various domains Summer Research Intern , NLM, U.S. National Institutes of Health Summer 2018 ↳ Mentor: Halil Kilicoglu, Ph.D. <ul style="list-style-type: none">• Developed joint-learning model for extracting drugs and their interactions from drug labels• Applied deep learning to the analysis of citation sentiment in clinical research articles Undergraduate Research Assistant , University of Kentucky 2011–2012 <ul style="list-style-type: none">• Worked on applying answer set programming to the problem of database query optimization
Teaching Experience	Graduate Teaching Assistant , University of Kentucky 2014–2016 ↳ CS215 – Introduction to Program Design, Abstraction, and Problem Solving <ul style="list-style-type: none">• Taught as a lab instructor in Fall 2014, Spring 2015, Fall 2015, and Spring 2016

- Publications in Progress
- **T. Tran** and R. Kavuluru. Neural Metric Learning for Fast End-to-End Relation Extraction. ([preprint](#))
- Refereed Journal Publications
1. **T. Tran**, M. Ickes, J. W. Hester, and R. Kavuluru. Predicting Current Juul use among Emerging Adults through Twitter Feeds. *International Journal of Medical Informatics*, 2021. ([preprint](#)) ([publisher](#))
 2. **T. Tran**, R. Kavuluru, and H. Kilicoglu. Attention-Gated Graph Convolutions for Extracting Drug Interaction Information from Drug Labels. *ACM Transactions on Computing for Healthcare (ACM Health)*, 2021. ([preprint](#)) ([publisher](#))
 3. **T. Tran** and R. Kavuluru. Social Media Surveillance for Perceived Therapeutic Effects of Cannabidiol (CBD) Products. *International Journal of Drug Policy*, 2020. ([preprint](#)) ([publisher](#))
 4. **T. Tran** and R. Kavuluru. Distant Supervision for Treatment Relation Extraction by Leveraging MeSH Subheadings. *Artificial Intelligence in Medicine*, 2019. ([preprint](#)) ([publisher](#))
 5. H. Kilicoglu, Z. Peng, S. Tafreshi, **T. Tran**, G. Roseblat, and J. Schneider. Confirm or Refute?: A Comparative Study on Citation Sentiment Classification in Clinical Research Publications. *Journal of Biomedical Informatics*, 2019. ([publisher](#))
 6. R. Doğan, S. Kim, A. Chatr-aryamontri, C. Wei, D. Comeau, and 22 others, including **T. Tran**. Overview of the BioCreative VI Precision Medicine Track: mining protein interactions and mutations for precision medicine. *Database: Journal of Biological Databases and Curation*, 2019. ([publisher](#))
 7. A. Sarker, M. Belousov, J. Friedrichs, K. Hakala, S. Kiritchenko, F. Mehryary, S. Han, **T. Tran**, and 8 others. Data and systems for medication-related text classification and concept normalization from Twitter: Insights from the Social Media Mining for Health (SMM4H) 2017 shared task. *Journal of the American Medical Informatics Association*, 2019. ([publisher](#))
 8. **T. Tran** and R. Kavuluru. An End-to-End Deep Learning Architecture for Extracting Protein-Protein Interactions Affected by Genetic Mutations. *Database: Journal of Biological Databases and Curation*, 2018. ([publisher](#))
 9. **T. Tran** and R. Kavuluru. Predicting Mental Conditions Based on “History of Present Illness” in Psychiatric Notes with Deep Neural Networks. *Journal of Biomedical Informatics*, 2017. ([preprint](#)) ([publisher](#))
- Conference and Workshop Publications
10. **T. Tran**, R. Kavuluru, and H. Kilicoglu. A Multi-Task Learning Framework for Extracting Drugs and Their Interactions from Drug Labels. In Proceedings of *The Eleventh Text Analysis Conference (TAC)*, 2018. ([report](#))
 11. A. Rios, **T. Tran**, and R. Kavuluru. Predicting Psychological Health from Childhood Essays with Convolutional Neural Networks for the CLPsych 2018 Shared Task (Team UKNLP). In

Proceedings of **The Fifth Workshop on Computational Linguistics and Clinical Psychology: From Keyboard to Clinic (CLPsych)**, 2018. ([publisher](#))

12. **T. Tran** and R. Kavuluru. Supervised Approaches to Assign Cooperative Patent Classification (CPC) Codes to Patents. In Proceedings of **The Fifth International Conference on Mining Intelligence and Knowledge Exploration (MIKE)**, 2017. ([preprint](#)) ([publisher](#))
13. **T. Tran** and R. Kavuluru. Exploring a Deep Learning Pipeline for the BioCreative VI Precision Medicine Task. In Proceedings of **The BioCreative VI Workshop**, 2017. ([report](#)) ([proceedings](#))
14. S. Han, **T. Tran**, A. Rios, and R. Kavuluru. Team UKNLP: Detecting ADRs, Classifying Medication In-take Messages, and Normalizing ADR Mentions on Twitter. In Proceedings of **The 2nd Social Media Mining for Health Applications Workshop and Shared Task at AMIA (SMM4H)**, 2017. ([report](#))
15. R. Kavuluru, A. Rios, and **T. Tran**. Extracting drug-drug interactions with word and character-level recurrent neural networks. In Proceedings of **The Fifth IEEE International Conference on Healthcare Informatics, Workshop on Healthcare Knowledge Discovery and Management (ICHI)**, 2017. ([preprint](#)) ([publisher](#))

Awards and Honors

2019 — Departmental Fellowship for the 2019–2020 Academic Year, Computer Science, UKY
 2018 — Ranked **2nd out of 8 teams** in the shared task on DDI extraction (TAC 2018)
 2018 — Biomedical Informatics Training Program Appointee, U.S. National Library of Medicine
 2017 — Ranked **2nd out of 6 teams** in the shared task on PPI extraction (BioCreative VI)
 2016 — Graduate School Travel Grant, UKY
 2015 — Departmental Nominee for the Microsoft PhD Fellowship Program, Computer Science, UKY
 2014 — Graduated Cum Laude, B.S. in Computer Science, UKY
 2010-2014 — Dean’s List for Three Semesters, UKY
 2010-2014 — Kentucky Educational Excellence Scholarship (KEES)
 2010 — Academic Competitiveness Grant
 2010 — Catalyst Scholarship

Grant Activity (neither PI nor co-PI)

Developed core proposal ideas and co-authored grant proposal draft. (NIH R01LM013240).
 “Advanced End-to-End Relation Extraction with Deep Neural Networks.”
 PI: Ramakanth Kavuluru. Awarded \$1,356,734 from 2020 to 2024. ([details](#))

Professional Service and Activities

Reviewer , 2× Empirical Methods in Natural Lang. Processing (EMNLP) Conference	2018–2020
Reviewer , 3× Bioinformatics Journal	2018–2020
Reviewer , 6× American Medical Informatics Association (AMIA) Annual Symposium	2019
Reviewer , 1× Scientometrics (SCIM) Journal	2018
Reviewer , 1× Journal of Biomedical Informatics (JBI)	2017
Member , American Medical Informatics Association (AMIA)	2016–Present

Member , Association for Computing Machinery (ACM)	2010–Present
Member , Chair Search Committee, Computer Science Department, UKY	2013
Chapter President , ACM Student Chapter, UKY	2012-2013
Engineering Student Council (ESC) Representative , ACM Student Chapter, UKY	2011-2012
Member , ACM Student Chapter, UKY	2010-2014

Invited Talks and Other Presentations

1. **An End-to-End Deep Learning Architecture for Extracting Protein-Protein Interactions Affected by Genetic Mutations.**, George Washington University (GWU) Informatics Seminar, September 2018.
2. **A Multi-Task Learning Framework for Extracting Drugs and Their Interactions from Drug Labels.**, U.S. National Institutes of Health (NIH) Summer Poster Day, August 2018. (Poster)
3. **Exploring a Deep Learning Pipeline for the BioCreative VI Precision Medicine Task.**, BioCreative VI Workshop, October 2017.
4. **Extracting drug-drug interactions with word and character-level recurrent neural networks.**, Fifth IEEE International Conference on Healthcare Informatics (ICHI), Workshop on Healthcare Knowledge Discovery and Management, August 2017.
5. **Prediction of Psychiatric Conditions Based on “History of Present Illness” from Psychiatric Notes**, 2016 CEGS N-GRID Shared-Tasks and Workshop on Challenges in Natural Language Processing for Clinical Data, November 2016.

Technical Skills

Python; Tensorflow; Keras; PyTorch; Word2Vec; GloVe; Scikit-learn; NLTK; Numpy; Pandas; Huggingface (transformers) library; Linux; Bash; Docker; HTML; JavaScript; CSS

Open Source Software

Personal Repository: <https://github.com/ttr222>

- 2018 — **Protein-Protein Interaction Extractor**. A deep learning based pipeline for end-to-end extraction of protein-protein interactions affected by genetic mutations.
- 2017 — **Autumn Named Entity Recognition (NER)**. A standalone deep neural network model for named entity recognition (NER).
- 2017 — **Drug-Drug Interaction (DDI) Extractor**. A deep neural network model for relation extraction of drug-drug interactions.
- 2017 — **Patent Data Harvester and Parser**. A system for harvesting full-text patents (and their CPC codes) from the USPTO website and parsing them to a machine-readable format.
- 2017 — **Adverse Drug Reaction (ADR) Mention Normalizer**. A deep neural network model for concept normalization of adverse drug reaction (ADR) mentions.