Huy V. Nguyen

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Curriculum vitae

Research Interest

Major areas

Natural language processing ◇ Deep learning ◇ Data mining

Education

Ph.D. in Computer Science August 2010 – December 2017
Dissertation: Context-aware Argument Mining and Its Application in Education
University of Pittsburgh, Pittsburgh, PA
GPA 3.98/4

B.S. in Information Technology September 2002 – May 2007
Thesis: A Parallel Genetic Algorithm for Steiner Tree Problem
Hanoi University of Science and Technology
GPA 8.64/10, Excellent Degree of Engineer

Experience

Applied Scientist February 2022 – onward
Data Scientist May 2021 – January 2022
Amazon Inc., Seattle, WA

- Manager: Devashish Khatwani, Data Science Manager.
- Lead projects in building NLP models/pipelines to assess accuracy of financial reports.

Data Science Manager October 2020 – April 2021
Principal Data Scientist September 2019 – September 2020
AppZen Inc., San Jose, CA

- Manager: Dr. Prateek Jaint, Director of Data Science.
- Work on building a Deep Neural Network framework to support a wide variety of NLP tasks.

Research Scientist February 2018 – September 2019
LingoChamp US Inc., San Mateo, CA

- Manager: Dr. Yang Liu, Head of Silicone Valley AI Lab.
- Work in an Artificial Intelligence Lab for Educational Applications. Research, develop and deploy models using Natural Language Processing and Deep Learning for automated student response evaluation and natural language understanding.

Natural Language Processing Engineer March 2017 – February 2018
Lenovo Inc., Morrisville, NC

- Manager: Vikram Sharma, Director of Software Engineering.
- Joined Lenovo Contextual Engine (LCE) Project. Researched and developed recommendation models based on mining pattern from large-scale data of computer users' activities to increase user experience with Lenovo products.

Graduate Student Researcher August 2011 – February 2017
University of Pittsburgh, Pittsburgh, PA

- Academic advior: Dr. Diane J. Litman, Professor, Computer Science Department.
- A member of SWoRD Project (sites.google.com/site/swordlrdc/home). Conducted research on peer review helpfulness (i.e., localization and solution), and argument mining in student writings.

Research Intern, R&D June 08 – August 28, 2015
Thomson Reuters Corp., Eagan, MN
- Supervisor: Dr. Frank Schneider, Research Director, R&D.
- Worked in a natural language generation project that aimed to supporting natural language queries to relational databases. The task was to develop a data-driven approach that automatically generates textual captions for each relation in database to enable natural language queries. My approach mined synonyms and paraphrases of keywords and phrases in relation's description, and sentential templates that connect key terms/phrases in natural language.

Research Intern, R&D June 03 – August 23, 2013
Motorola Solutions Inc., Chicago, IL
- Supervisor: Dr. Yan-Ming Cheng, Senior Research Manager, CTO.
- Worked in a spoken dialog project that aimed to supporting natural language queries to relational databases. Developed a rule-based approach to convert a relational database schema to a relational ontology in RDF specification, which focused on the semantics between RDB entities and relations.

Visiting Scholar February – June 2009
University of Houston, TX
- Supervisor: Dr. Marc Garbey, Professor, Computer Science Department.
- Worked in Virtual Prairie project (vcsc.cs.uh.edu/virtual-prairie/). Researched and implemented a parallel genetic algorithm framework for a computational ecology problem.

Lecturer September 2007 – August 2010
Hanoi University of Science and Technology, Vietnam
- Manager: Dr. Nghia Duc Nguyen, Professor, Head of Computer Science Department.
- Taught courses including Discrete mathematics, Parallel computing, and Scientific computing.

Skills

Programming:	Python, Java, C/C++
NLP:	Stanford CoreNLP, Spacy, NLTK, MALLET, OpenNLP, Gensim, GibbsLDA++, SEMILAR, Word2Vec, Glove, Discourse parsers
Machine Learning:	TensorFlow, PyTorch, Transformers, Scikit-learn, Spark MLlib, Weka, LibSVM, LibLINEAR, Matlab
Distributed/parallel computing:	Spark, Hadoop, MPI, OpenMP

Background

Solid background:	Algorithms and data structures, Probability & statistics, Mathematics, Discrete mathematics, Object-oriented design & programming
Practical experience:	Natural language processing, Machine learning, Deep learning, Neural Networks, Parallel genetic algorithms, Formal grammars and formal languages, Intelligent tutoring system

Journal

◇ **Huy Nguyen**, Wenting Xiong, and Diane Litman. *Iterative Design and Classroom Evaluation of Automated Instant Feedback for Improving Peer Feedback Localization.* International Journal of Artificial Intelligence in Education (2017), Special Issue: Formative Feedback in Interactive Learning Environments. pp 1–41.

Publications

- Weihan Li, **Huy Nguyen**. *Cascading Correction for Hierarchical Classification.* Proceedings of Product Content Understanding and Generation Workshop, Amazon Machine Learning Conference, October 2022, Seattle, USA.
- Abhinav Bohra, **Huy Nguyen**, Devashish Khatwani. *AutoWS: Automated Weak Supervision Framework for Text Classification.* Proceedings of Amazon Machine Learning Conference, October 2022, Seattle, USA.
- **Huy Nguyen**, Devashish Khatwani. *Robust Product Classification with Instance-dependence Noise.* Proceedings of the Fifth Workshop on e-Commerce and NLP (ECNLP 5) at ACL, May 2022, Ireland.
- Farah Nadeem, **Huy Nguyen**, Yang Liu and Mari Ostendorf. *Automated Essay Scoring with Discourse-Aware Neural Models.* Proceedings of the 14th Workshop on Innovative Use of NLP for Building Educational Applications at ACL, August 2019, Italy.
- **Huy Nguyen**, Lei Chen, Ramon Prieto, Chuan Wang, and Yang Liu. *Liulishuo's System for the Spoken CALL Shared Task 2018.* The 19th Annual Conference of the International Speech Communication Association, September 2018, India. *First-ranked team.*
- **Huy Nguyen** & Diane Litman. *Argument Mining for Improving Persuasive Essay Score Prediction.* Proceedings of 32nd AAAI Conference on Artificial Intelligence (AAAI-18), February 2018, New Orleans, Louisiana, USA. Long paper.
- **Huy Nguyen** & Diane Litman. *Context-aware Argumentative Relation Mining.* Proceedings 54th Annual Meeting of the Association for Computational Linguistics (ACL), August 2016, Berlin, Germany. Long paper.
- **Huy Nguyen**, Wenting Xiong, and Diane Litman. *Instant Feedback for Increasing the Presence of Solutions in Peer Reviews.* Accepted for a demonstration in NAACL 2016, June 2016, San Diego, CA, USA.
- **Huy Nguyen** & Diane Litman. *Improving argument mining in student essays by learning and exploiting argument indicators versus essay topics.* The 29th International FLAIRS Conference, May 2016, Key Largo, FL. **Best Student Paper Award**.
- **Huy Nguyen** & Diane Litman. *Extracting argument and domain words for identifying argument components in texts.* The 2nd Workshop on Argumentation Mining, NAACL-HLT 2015, Denver, CO, 2015.
- **Huy Nguyen** & Diane Litman. *Improving Peer Feedback Prediction: the Sentence Level Is Right.* The 9th BEA-ACL 2014 Workshop, Baltimore, MD, 2014.
- **Huy Nguyen**, Wenting Xiong, and Diane Litman. *Classroom Evaluation of a Scaffolding Intervention for Improving Peer Review Localization.* The 12th ITS conference, Honolulu, HI, 2014.
- **Huy Nguyen** & Diane Litman. *Identifying Localization in Peer Reviews of Argument Diagrams.* The 16th AIED conference, Memphis, TN, 2013.
- **Huy Nguyen** & Diane Litman. *Predicting Low vs. High Disparity between Peer and Expert Ratings in Peer Reviews of Physics Lab Reports.* The 16th AIED conference, Memphis, TN, 2013.
- Jesse Thomason, **Huy Nguyen**, and Diane Litman. *Prosodic Entrainment and Tutoring Dialogue Success.* The 16th AIED conference, Memphis, TN, 2013.
- Malek Smaoui Feki, **Huy Nguyen**, and Marc Garbey. *Parallel Genetic Algorithm Implementation for BOINC.* ParCo 2009 conference, Lyon, France, 2009.
- **Huy Nguyen** & Nghia Nguyen. *Solving Graphical Steiner Tree Problem Using Parallel Genetic Algorithm.* The 2008 IEEE RIVF, University of Natural Sciences, Ho Chi Minh City, Vietnam, 2008.

Academic Activities

- Program committee: Workshop on Innovative Use of NLP for Building Educational Applications (BEA) ⋄ Argument Mining Workshop (ArgMining) ⋄ Mid-Atlantic Student Colloquium on Speech, Language and Learning (MASC-SLL).
- Reviewer: ACL ⋄ NAACL ⋄ EMNLP ⋄ BEA ⋄ ArgMining ⋄ MASC-SLL.
- Secretary of Graduate Student Organization Fall 2014 – Fall 2015, Computer Science Department, University of Pittsburgh
- Mentor of Lego Mindstorms Group for Kid, Spring – Summer 2007, Children Institute of Hanoi, Vietnam

Academic Honors

- ⋄ Teaching Fellowship, School of Arts & Sciences, University of Pittsburgh, Fall 2010
- ⋄ President's Paper of Commendation for Excellent Students in Studying and Graduation, Hanoi University of Science and Technology, July 24, 2007
- ⋄ Third prize in Student Research Contest, School of Information and Communication, Hanoi University of Science and Technology, May 20, 2007
- ⋄ ELAND-Vietnam Corp. Scholarship for Excellent Students in Vietnam, May 8, 2007
- ⋄ FPT Information System Co. Ltd. Scholarship for Excellent Students in Information Technology, Dec 21, 2006
- ⋄ Intel-Vietnam Co. Scholarship for Excellent Students in Information Technology, Oct 18, 2004
- ⋄ Hanoi University of Science and Technology Scholarship for academic excellence, 10/10 semesters, 2002 – 2007