

Trung Vu

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EDUCATION	Oregon State University, Corvallis, OR PhD., Computer Science - Machine Learning GPA: 3.96/4 (current) Hanoi University of Science and Technology (HUST), Hanoi, Vietnam B.Eng., Computer Science, <i>Honor program</i> : Talented Engineers Thesis: Abstractive text summarization for single-document on Vietnamese texts (graded A+, top 1/400) GPA: 8.78/10 (convertible to 4-scale: 3.69/4, top 5%) High School for Gifted Students, Hanoi, Vietnam Affiliated with Hanoi National University of Education Subject of specialization: Mathematics	2016-now Advisors: Raviv Raich 2009 - 2014 2006 - 2009
RESEARCH EXPERIENCE	Research Assistant at Oregon State University Supervisor: Dr. Raviv Raich, Associate Professor <i>Commercialization Project with SmartVineyards: Development and validation of an intelligent decision support system to improve irrigation management in vineyards and other west coast crops.</i> <ul style="list-style-type: none">• Preprocessing data measured from a real-time system of soil moisture sensors, irrigation sensors and weather sensors. Building a cloud-based system (Databricks platform) that processes raw sensor data automatically.• Collaborating with faculties from 6 different departments at Oregon State University and Washington State University to build an intelligent decision support system to guide the growers around irrigation management.• Implementing machine learning algorithms to classify noise in data, predict soil moisture time series and predict irrigation decision with high accuracy. R&D Engineer at Viettel R&D Institute, Hanoi, Vietnam Supervisor: Dr. Tran-Su Le, Deputy Director of Centre C4I <i>Threat Evaluation and Weapon Assignment (TEWA) systems in military surface-based air defence environment.</i> <ul style="list-style-type: none">• Headed a team of three R&D engineers investigating real-time threat evaluation algorithms including Fuzzy Logic, Bayesian Networks, and Neural Networks. All of those new algorithms outperform the rule-based method ran by the system at that time.• Developed an explicit GUI tool for easily constructing and training Bayesian Networks.• Designed a more complete evaluation of TEWA systems by adding stimulation situations, collecting both real-world data and generated data from battle tactics. Research Assistant at HUST, Hanoi, Vietnam Supervisor: Assoc.Prof., Dr. Huong Thanh Le, Department of Information System <i>Abstractive text summarization for single-document on Vietnamese texts.</i> <ul style="list-style-type: none">• Created a ground-truth dataset of approximately 200 documents with their corresponding human-generated summaries and applied natural language processing tools for processing Vietnamese texts.• Researched sentence reduction and sentence generation techniques that involve Conditional Random Field, Hidden Markov Model, word graphs and algorithms for graph traversal.• Evaluated the performance of the system using ROUGE-N metric to demonstrate that the proposed approach achieves better performance than a baseline method. Research Assistant at HUST, Hanoi, Vietnam Supervisor: Dr. Khanh Duc Tran, Department of Information System	2016-2018 2014-2015 2013-2014 2011-2014

Fuzzy linguistic logic with the truth domain based on hedge algebra.

- Developed theoretical concepts of fuzzy logic based on linear symmetrical hedge algebra and extended the result to refined hedge algebra and propose an optimized resolution procedure with maximal reliability.
- Led the undergraduate student research group on Fuzzy Logic.
- Submitted three international conference papers, one of which is the top-tier FUZZ-IEEE 2013.

PUBLICATIONS

1. **Trung Vu** and Raviv Raich, "Local Convergence of the Heavy Ball method in Iterative Hard Thresholding for Low-Rank Matrix Completion," In Proceedings of IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP), Brighton, UK, May 12-17 2019, Accepted.
2. **Trung Vu** and Raviv Raich, "Accelerating Iterative Hard Thresholding for Low-Rank Matrix Completion via Adaptive Restart," In Proceedings of IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP), Brighton, UK, May 12-17 2019, Accepted.
3. **Trung Vu**, Raviv Raich. "Adaptive Step Size Momentum Method For Deconvolution," In 2018 IEEE Statistical Signal Processing Workshop (SSP), pp. 438-442. IEEE, 2018.
4. Thi-Minh-Tam Nguyen, **Viet-Trung Vu**, The-Vinh Doan, Duc-Khanh Tran. "Resolution in linguistic first order logic based on linear symmetrical hedge algebra," In International Conference on Information Processing and Management of Uncertainty (IPMU) in Knowledge-Based Systems, pp. 345-354. Springer, Cham, 2014.
5. Thi-Minh-Tam Nguyen, **Viet-Trung Vu**, The-Vinh Doan, Duc-Khanh Tran. "Resolution in Linguistic Propositional Logic Based on Linear Symmetrical Hedge Algebra," In Proceedings of The Fifth International Conference on Knowledge and Systems Engineering (KSE), pp. 327-338. Springer, Cham, 2014.
6. Duc-Khanh Tran, **Viet-Trung Vu**, and Minh-Tam Nguyen. "Fuzzy linguistic propositional logic based on refined hedge algebra," In 2013 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), pp. 1-8. IEEE, 2013.
7. **Viet-Trung Vu**, The-Vinh Doan. "Fuzzy Linguistic Propositional Logic based on Refined Hedge Algebra," In Proceedings of 2012-2013 Scientific Research Conference of Hanoi University of Science and Technology, School of Information and Communication Technology (SoICT), 2013.

WORKING
EXPERIENCE

- Graduate Teaching Assistant**, Oregon State University
Course: CS261 - Data Structures. Winter 2019
Course: CS271 - Computer Architecture and Assembly Language. Fall 2016
- Fruitful Technologies Vietnam**, Hanoi, Vietnam 2015-2016
Position: Software Developer.
Job Description: Developed a front-end web application using Spring framework and NodeJS. Our product can be found at <https://www.prism.horse/home>
Experience: MySQL, Java, PHP, Javascript, CSS3, HTML5.
- Viettel R&D Institute**, Hanoi, Vietnam 2014-2015
Vietnam's largest Research and Development Center, owned by Viettel Group.
Position: R&D Engineer.
Job Description: Researched into the development and evaluation of TEWA systems in air defense situations.
Experience: PostgreSQL, C/C++, Qt Framework, Bash Scripts, Erlang.
- Datasection Vietnam**, Hanoi, Vietnam Feb-May 2013
Position: Research Intern (part-time).
Job Description: Implemented a word tokenization algorithm using Hidden Markov Models on a 5GB corpus of Vietnamese text with 90% accuracy.
Experience: Word2vec, Java.
- FPT Software**, Hanoi, Vietnam Jun-Aug 2013
Position: Software Developer.

Job Description: Migrated a bank application from Lotus Notes to SharePoint using C# and SharePoint platform. This project provided hands on experience in highly-available and large-scale systems.

Experience: C#, SQLServer, SharePoint.

AWARDS

- Third Prize at the 2012-2013 Scientific Research Conference of HUST
- Honor Program in Center for Training of Excellent Students, 2009-2014
- Government-sponsored Scholarship granted annually by Ministry of Education and Training at Hanoi University of Science and Technology, 2009-2014
- Highest score on the Vietnam National University entrance exam, 2009
- Second highest score on the Hanoi University of Science and Technology entrance exam, 2009

REFERENCES

Dr. Raviv Raich

Associate Professor

School of Electrical Engineering & Computer Science

Oregon State University, Corvallis, Oregon

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