

Huyen N. Nguyen

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SUMMARY

I am a third-year Ph.D. student in Computer Science at Texas Tech University, advised by Dr. Tommy Dang in the Interactive Data Visualization Lab. Across the vast range of interactive data, my research interests include **data visualization and analysis**, **visual analytics**, and **HCI**. I study interactive visualization techniques and applications that enhance the understanding of large-scale data, including quantitative and qualitative data.

EDUCATION

Texas Tech University, Lubbock, TX 08/2018 — present

Doctoral degree in Computer Science

- Research areas: Data Visualization and Visual Analytics
- Professional development: Presenter, Scientific Computing meets Machine Learning & Life Sciences Workshop; Co-organizer, Tech Women in High Performance Computing

Hanoi University of Science and Technology, Hanoi, Vietnam 09/2013 — 06/2018

Bachelor of Science in Information Systems, 5-year Engineer Program

- Thesis: "Multi-label Image Classification on a Real-life Photo Gallery with MobileNetv2"
- Honors: Temasek Foundation Singapore Full Scholarship for Specialists' Community Action & Leadership Exchange (Top **0.5%**), Excellence Scholarship (Top **1%**) in recognition of outstanding academic performance

FUNDED GRANT

NASA, administered by Gordon Research Conferences: Visionary Research Grant, Visualizing Qualitative Data for Science and Education, \$10,000, with Caleb M. Trujillo, University of Washington Bothell; Kathleen Jeffery, University of New Hampshire and Kevin Wee, Purdue University.

HONORS AND AWARDS

VAST Challenge, *Honorable Mention* for Detailed Analysis of Patterns of Misclassification: 2020 [demo, video]
Gelin Graduate Scholarship: 2020

Texas Tech University Whitacre College of Engineering DesigENGR Scholarship: 2018 and 2019

Hanoi University of Science and Technology Scholarship, for excellence in academic performance: 2016

Temasek Foundation Singapore Full Scholarship, Specialists' Community Action & Leadership Exchange: 2015

Vietnam National Physics Olympiad, Honorable Mention: 2013

Odon Vallet Scholarship, Rencontres du Vietnam, for outstanding academic performance: 2012

Hung Vuong Olympiad, Gold medals in Physics: 2011 and 2012

PUBLICATIONS

2020

10. **Nguyen, H. N.**, Gonzalez, J., Guo, J., Nguyen, N. V.T., and Dang, T. (2020). VisMCA: A Visual Analytics System for Misclassification Correction and Analysis. VAST 2020 Mini-Challenge 2 Award: Honorable Mention for Detailed Analysis of Patterns of Misclassification. *IEEE Conference on Visual Analytics Science and Technology (VAST) (To Appear)*.
9. **Nguyen, H. N.**, Nguyen, V.T., and Dang, T. (2020). Interface Design for HCI Classroom: From Learners' Perspective. In: Bebis G. et al. (eds) Advances in Visual Computing. *ISVC 2020. Lecture Notes in Computer Science*, vol 12510. Springer, Cham. doi: 10.1007/978-3-030-64559-5_43.
8. Dang, T., Pham, V., **Nguyen, H. N.**, and Nguyen, N. V. (2020). AgasedViz: Visualizing Groundwater Availability of Ogallala Aquifer, USA. *Environmental Earth Sciences*, 79(5), 1-12. doi: 10.1007/s12665-020-8851-6.

7. Dang, T., Van, H., **Nguyen, H. N.**, Pham, V., and Hewett, R. (2020). DeepVix: Explaining Long Short-Term Memory Network with High Dimensional Time Series Data. *Proceedings of the 11th International Conference on Advances in Information Technology (IAIT2020)*, 1-10. doi: 10.1145/3406601.3406643.

2019

6. Dang, T., **Nguyen, H. N.**, and Pham, V. (2019). WordStream: Interactive Visualization for Topic Evolution. In Johansson, J., Sadlo, F., and Marai, G. E., editors, *EuroVis 2019 - Short Papers*. The Eurographics Association. doi: 10.2312/evs.20191178.
5. **Nguyen, H. N.** and Dang, T. (2019). EQSA: Earthquake Situational Analytics from Social Media, *IEEE Conference on Visual Analytics Science and Technology (VAST)*, Vancouver, BC, Canada, 142-143. doi: 10.1109/VAST47406.2019.8986947.
4. Le, D., Pham, V., **Nguyen, H. N.**, and Dang, T. (2019). Visualization and Explainable Machine Learning for Efficient Manufacturing and System Operations. *Smart and Sustainable Manufacturing Systems*, 3(2), 127-147. doi: 10.1520/SSMS20190029.
3. Van, H., **Nguyen, H. N.**, Hewett, R., and Dang, T. (2019). HackerNets: Visualizing Media Conversations on Internet of Things, Big Data, and Cybersecurity. *BigEACPS at IEEE International Conference on Big Data (Big Data)*, 3293-3302. doi: 10.1109/BigData47090.2019.9006417.

2018

2. **Nguyen, H. N.**, Nguyen, V. T., Nguyen, N. V., Pham, V., and Dang, T. (2018). lotNegViz: An interactive tool for visualizing negative aspects of IoT. *BigEACPS at IEEE International Conference on Big Data (BigData)*, 4565–4568. doi: 10.1109/BigData.2018.8621984.
1. Nguyen, M. T., **Nguyen, H. N.**, and Teague, K. A. (2018). Wavelet-based Energy Efficient Data Collection Algorithm in Wireless Sensor Networks. *ICSES Transactions on Computer Networks and Communications (ITCNC)*, 4(2), 3-10.

WORK EXPERIENCE

Teaching Assistant, Texas Tech University

09/2019 – 1/2020

Department of Computer Science

- Graduate courses: Intelligent Systems (41 students), Logic for Comp. Scientists (41 students)
- Undergraduate courses: Intro to Artificial Intelligence (50 students), Software Engineering II (65 students)
- Helped students with coursework inquiries, graded and updated assignments and programming source codes
- Developed and presented tutorials on modeling, analysis with the User Requirements Notation, jUCMNav

Research Assistant, Texas Tech University

09/2018 – 06/2019

Interactive Data Visualization Lab

- Developed web-based interactive visualizations that support visual representation of structured and unstructured data, including qualitative and quantitative data, with D3js and Python
- Enhanced understanding of data by analyzing and discovered insights with visualization and visual analytics
- Collaborated with domain experts for conducting case studies and model evaluation in practice: High Plains Underground Water Conservation District & Southern Great Plains Soil Survey Region 9 at Lubbock, Texas, USA.
- Wrote and published two conference papers and one journal article in peer-reviewed venues and journal
- Assisted in grant proposal writing in visualizing social media data for event analysis and trending exploration

Research Student Assistant, Hanoi University of Science and Technology

10/2015 – 06/2018

Data Science Lab, Hanoi, Vietnam

- Studied on research about machine learning models: Techniques and applications.
- Evaluated different models for solving computer vision problems.
- Implemented Convolutional Neural Networks for object detection task with TensorFlow library.

Intern, VC Corp

06/2016 – 08/2016

Vietnam Communications Corporation, Hanoi, Vietnam

- Implemented Hadoop and Apache Spark processing frameworks to perform distributed computing in large clusters.
- Contributed to anomaly detection project on system metadata.
- Implemented MapReduce framework to solve the file storage issues using Maven project in Java.

SKILLS

Programming: JavaScript, Python, C++, Java, R, ReactJS, Answer Set Programming (ASP)

Libraries: D3js, OpenCV, TensorFlow, spaCy

Software: Tableau, Dedoose, MATLAB**Research-related:** Proposal writing, Interviewing, Conducting user studies**POSTER PRESENTATIONS**

1. **Nguyen, H.** and Dang, T., (2019). WordStream: An Interactive Visualization for Topic Evolution. Poster presented at the Visualization in Science and Education, Gordon Research Conference. Lewiston, ME.
2. **Nguyen, H.** and Dang, T., (2019). Interactive Visualization for Earthquake Analytics from Social Media Data. Poster presented at the Scientific Computing meets Machine Learning and Life Sciences Workshop, Texas Tech University, Lubbock, TX.

TALKS

1. **Nguyen, H.** (2020). Data Visualization and Applications. Talk presented at Advanced Wireless Communication Networks (AWCN) Laboratory, Thai Nguyen University of Technology, Thai Nguyen, Vietnam.
2. Dang, T. and **Nguyen, H.** (2019). Visual analytics and Virtual Reality. Talk presented at The Cognition & Cognitive Neuroscience area of Experimental Psychology, Department of Psychological Sciences, Texas Tech University, Lubbock, TX.

CERTIFICATES

1. **International Teaching Assistant**, Texas Tech University, by The ITA Workshop, Summer 2019.
2. **Human Subject Training**: TTU Social and Behavioral Research, by Human Research Protection Program, Texas Tech University, 2019.
3. **Certificate of Achievement**, by Committee on Ethnic Minority Affairs, Vietnam, for outstanding achievement in National Olympiad and University Entrance Examination, 2013.