

# HUYEN N. NGUYEN

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## EDUCATION

**Texas Tech University**, Lubbock, TX

Aug. 2018 – present

*Doctoral Degree in Computer Science*

- Research areas: Data Visualization, Visual Analytics, and Human-Computer Interaction
- Dissertation direction: Visualization for event detection mechanism for multivariate time-series data
- Graduate Student Affiliate, STEM Center for Outreach, Research & Education (STEM CORE)

**Hanoi University of Science and Technology**, Hanoi, Vietnam

Sep. 2013 – Jun. 2018

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

- Honors: Temasek Foundation Singapore Full Scholarship for Community Action & Leadership Exchange (Top 0.5%), Excellence Scholarship (Top 1%) in recognition of outstanding academic performance

## WORK EXPERIENCE

**Texas Tech University**, Dept. of Computer Science

*Ph.D. Researcher in Data Visualization, Interactive Data Visualization Lab*

Sep. 2018 – present

- Developed *WordStream*, a novel visualization for topic evolution in text analysis. Processed raw data from 10,000 to 75,000 records per dataset, built an interactive web-based application and optimized the algorithm for faster rendering by 300%
- Managed technical side for an interdisciplinary research team of 4, funded \$10,000 by NASA. Augmented *WordStream* to apply in the new domain of educational assessments of a 10-week study
- Contributed to writing a grant proposal for an intelligent visual framework for analyzing chemical measurement data, projected to save 25% data analysis time
- Collaborated with High Plains Underground Water scientists to analyze data over 21 years, resulting in a monitoring dashboard to detect groundwater decline and depletion
- Investigated 2D and 3D representations, collaborated with Dell Inc. on High-Performance Computing systems with nine health metrics, supporting real-time monitoring and outlier detection for 2,000 records

*Teaching Assistant*

Sep. 2019 – present

- Fall 2021 – Spring 2022: Primary instructor for CS2413 Data Structures Lab. Prepared and taught lectures, held office hours and evaluated performances for 100 students
- Helped students with coursework inquiries, graded and updated assignments and programming source codes in Introduction to Artificial Intelligence (90 students), Software Engineering II (65 students)
- Developed and presented tutorials on modeling and analysis with User Requirements Notation, jUCMNav

**VC Corp – Vietnam Communications Corporation** (Top 5 Vietnam Tech Companies)

Jun. 2016 – Aug. 2016

*Big Data Engineer Intern*

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

## FUNDED GRANT

**NASA, Visionary Research Grant**, administered by Gordon Research Conferences: Visualizing Qualitative Data for Science and Education (Lewiston, ME), \$10,000, in a multidisciplinary team with Caleb Trujillo, University of Washington Bothell; Kathleen Jeffery, University of New Hampshire and Kevin Wee, Purdue University.

## HONORS AND AWARDS

- **IEEE Visual Analytics Science and Technology (VAST) Challenge 2020**, recognized as *Honorable Mention* for Detailed Analysis of Patterns of Misclassification
- Dept. of Computer Science, Texas Tech, Scholarship for outstanding performance, \$5000, awarded in 2020
- Texas Tech University Whitacre College of Engineering Scholarship, in 2018 and 2019

## FEATURED PUBLICATIONS

*(Complete list here)*

1. **Nguyen**, Trujillo, Wee, K., and Bowe. (2021). Interactive Qualitative Data Visualization for Educational Assessment. In *The 12th International Conference on Advances in Information Technology*. Association for Computing Machinery, New York, NY, USA, Article 13, 1–9. DOI: [10.1145/3468784.3469851](https://doi.org/10.1145/3468784.3469851).
2. Nguyen, **Nguyen**, Hass, and Dang. (2021). JobNet: 2D & 3D Visualization for Temporal and Structural Association in High-Performance Computing System. In *Advances in Visual Computing. ISVC 2021. Lecture Notes in Computer Science, vol 13017*. Springer, Cham. DOI: [10.1007/978-3-030-90439-5\\_17](https://doi.org/10.1007/978-3-030-90439-5_17).
3. Dang, **Nguyen**, and Nguyen. (2021). VixLSTM: Visual Explainable LSTM for Multivariate Time Series. In *The 12th Conf. on Advances in Information Technology*. Article 34. (pp. 1-5). DOI: [10.1145/3468784.3471603](https://doi.org/10.1145/3468784.3471603).
4. **Nguyen**, Nguyen, and Dang. (2020). Interface Design for HCI Classroom: From Learners' Perspective. In: *Advances in Visual Computing. Lecture Notes in Computer Science*. DOI: [10.1007/978-3-030-64559-5\\_43](https://doi.org/10.1007/978-3-030-64559-5_43).
5. Dang, Pham, **Nguyen**, and Nguyen. (2020). AgasedViz: Visualizing Groundwater Availability of Ogallala Aquifer, USA. *Environmental Earth Sciences*, 79(5), 1-12. DOI: [10.1007/s12665-020-8851-6](https://doi.org/10.1007/s12665-020-8851-6).
6. Dang, Van, **Nguyen**, Pham, and Hewett. (2020). DeepVix: Explaining Long Short-Term Memory Network with High Dimensional Time Series Data. *Proc. of the 11th Int. Conf. on Advances in Information Technology*, 1-10. DOI: [10.1145/3406601.3406643](https://doi.org/10.1145/3406601.3406643).
7. Dang, **Nguyen**, and Pham. (2019). WordStream: Interactive Visualization for Topic Evolution. In *EuroVis 2019 - Short Papers*. The Eurographics Association. DOI: [10.2312/evs.20191178](https://doi.org/10.2312/evs.20191178).
8. **Nguyen** and Dang. (2019). EQSA: Earthquake Situational Analytics from Social Media, *IEEE Conference on Visual Analytics Science and Technology (VAST)*, (142-143) DOI: [10.1109/VAST47406.2019.8986947](https://doi.org/10.1109/VAST47406.2019.8986947).
9. Le, Pham, **Nguyen**, and Dang. (2019). Visualization and Explainable Machine Learning for Efficient Manufacturing and System Operations. *Smart and Sustainable Manufacturing Sys.*, 3(2) (127-147) DOI: [10.1520/SSMS20190029](https://doi.org/10.1520/SSMS20190029).

## SERVICES

- Contributed to the Recruiting Campaign, Department of Computer Science, Texas Tech University. Oversaw and provided relevant information to 200+ prospective students.
- Conducted reviews for manuscripts to IEEE Workshop on Big Data Engineering and Analytics in Cyber-Physical Systems, ICSES Transactions on Computer Networks and Communications.
- Mentored a student on professional development under Tech Intrapreneurship Program - Scholarships in STEM, sponsored by the National Science Foundation and Texas Instruments