Guizhen Wang

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EDUCATION

Purdue University, Department of Statistics   Jan.2019 – Dec 2021
M.S. in Joint Statistics and Computer Science   **GPA: 3.40/4.00**
Purdue University, School of Electrical and Computer Engineering   Aug. 2013 - Aug 2020
Ph.D. in Computer Engineering   **GPA: 3.60/4.00**
Zhejiang University, College of Computer Science, Hangzhou, China   Aug. 2009 - May 2012
M.S. in Computer Science   **GPA: 3.84/4.00**
Shandong University, College of Computer Science, Jinan, China   Sept. 2005 - July 2009
B.S. in Computer Science   **GPA: 3.70/4.00**

TECHNICAL SKILLS

- Programming languages: Java , C++, Python, C, HTML5, CSS, Javascript, SQL, R, Matlab, NoSQL
- Programming libraries and framework: MFC, .Net, OpenGL, Qt, React, Flask, PyTorch, Spark, AWS, CI/CD, OOZIE

RELEVANT COURSEWORK

- Math and Statistics: Elementary Stochastic Process, Applied Bayesian Decision Theory, Data Mining, Design of Experiment, Linear Algebra, Calculus, Discrete Mathematics, Probability and Statistics,
- Computer Science: Operating System, Compiler, Network, Distributed system, Algorithm, Data structure, Data Visualization, Database

RESEARCH EXPERIENCE

Internship
Champaign Office, Verizon Media, Champaign, IL   June. 2021 - Aug 2021
- Develop workflows speeding up data transferring between internal datacenters and AWS

Graduate Student Research Assistant
School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN   Aug. 2013 - present
- Developed multiple data visualization systems serving multiple data-driven decision-making scenarios (e.g., Law Enforce Agencies, and Precision Irrigation). Two of developed systems have been used by end users for 5+ years.
- Designed novel sampling-based approximate query processing approaches to reducing large data processing latency，including designing client-server data transfer workflow and resolving spatial sampling bias
- Developed a data-mining approach to detecting anomalous vessel movement activities.
- Developed a web application that incrementally sample large trajectory data in the Spark and HDFS cloud environment.
- Conducted preliminary research on Augmented Reality for Manufacturing

Graduate Student Research Assistant
College of Computer Science, Hangzhou, Zhejiang, China   Aug. 2009 - Dec.2012
- Conducted data mining and data visualization research for social network data and document corpus (e.g., sequential semantic evolution)
- Compressed 3D volume data by leveraging some numerical calculation algorithms, including hashing and tensor.

Internship
Internet Graphics Group, Microsoft Research Asia, Beijing, China   May. 2011 - June 2012
- Conducted research on textual data analysis and visualization (e.g., exploring a huge corpus based on topic information).

HONORS AND AWARDS

- 2017 Purdue Graduate Student Government (PGSG) Travel Grant Award
- 2015 IEEE VAST Challenge Honorable Mention: Compelling Narrative Debrief
- 2011 IEEE PacificVis Best Poster Award
- 2010 1st-class Award of Honor for Graduate of Zhejiang University (Top 3/28 students were awarded.)
- 2005-2009 Excellent student scholarship at Shandong University for 3 times (Top 5% students were awarded.)

PUBLICATIONS

Guizhen Wang, Jingjing Guo, Mingjie Tang, Jose Florencio de Queiroz Neto, Calvin Yau, Anas Daghi, Calvin Yau, Anas Daghistani, Morteza Karimzadeh, Walid G. Aref, David Ebert. STULL: Unbiased Online Sampling for Visual Exploration of Large Spatiotemporal Data. IEEE Visualization Conference 2020.

Jieqiong Zhao, Morteza Karimzadeh, Hanye Xu, Abish Malik, Shehzad Afzal, **Guizhen Wang**, Niklas Elmqvist, David S. Ebert. Route Packing: Geospatially-Accurate Visualization of Route Networks. The Hawaii International Conference on System Sciences. 2020

Chittayong Surakitbanharn, Calvin Yau, **Guizhen Wang**, Aniesh Chawla, Yinuo Pan, Zhaoya Sun, Sam Yellin, David Ebert, Yung-Hsiang Lu and George Thiruvathukal. Cross-referencing social media and public surveillance camera data for disaster response. IEEE International Symposium on Technologies for Homeland Security 2018.

Guizhen Wang, Aubrey Akers, Jose Florencio de Queiroz Neto, Chittayong Surakitbanharn, David Ebert. Spatiotemporal Driven Analysis of Law Enforcement Data. IEEE Workshop on Visualization in Practice 2017.

Guizhen Wang, Abish Malik, Chittayong Surakitbanharn, Jose Florencio de Queiroz Neto, Shehzad Afzal, Siqiao Chen, David Ebert. A Client-based Visual Analytics Framework for Large Spatiotemporal Data under Architectural Constraints. IEEE Workshop on Data Systems for Interactive Analysis, 2017.

Guizhen Wang, Abish Malik, Calvin Yau, Chittayong Surakitbanharn, David Ebert. TraSeer: A Visual Analytics Tool for Vessel Movements in the Coastal Areas. IEEE International Conference on Technologies for Homeland Security, 2017.

Guizhen Wang, Chaokai Wen, and Binghui Yan, and Wei Chen. Topic HyperGraph: A Long Document Sequential Visualization. SCIENCE CHINA Information Sciences 56(5): 1-14 (2013)

Guizhen Wang, Lin Liu, Zhen Liu, Yueqi Hu, Jing Xia, Wei Chen and Dichao Peng. Visual Analysis of People's Calling Network from CDR data. Journal of Information and Computational Science. Vol.9, No.4, 2012.

Guizhen Wang, Haidong Chen, Song Zhang, and Wei Chen. Visualizing Differences of DTI Fiber Models Using 2D Normalized Embeddings. IEEE Visualization 2010 poster.

Shuang Ye, **Guizhen Wang**, Guangyu Chen, Haidong Chen, and Wei Chen. GPU-friendly Regularization and Volume Rendering of Tetrahedral Volumetric Datasets. Chinagraph 2010.

MENTORING EXPERIENCE

Graduate Mentor
Department of Electrical and Computer Engineering, Purdue University   Summers (2016, 2017) & Spring (2019, 2020)
- Mentored two undergraduate students majored in Computer Science to develop new components in a visual analytics system for law enforcement agencies.
- Mentored an undergraduate majored in Computer Science to develop a QT-based data visualization system for Augmented-Reality decision-making environments.
- Mentored two undergraduates majored in Electrical and Computer Engineering to develop a Java-based data visualization system for radar-captured human movement data.