# Jieqiong Zhao


CONTACT INFORMATION
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## EDUCATION

**Purdue University**, West Lafayette, IN
*Ph.D. Candidate in Electrical and Computer Engineering* Jun 2013 - May 2020 (Expected)

- Advisor: David S. Ebert
- Thesis : Visual analytics for decision making in performance evaluation

**Tufts University**, Medford, MA
*M.S. of Computer Science* Sep 2011 - May 2013

- Advisor: Remco Chang
- Project: Modeling user interactions for complex visual search tasks

**Zhejiang University of Technology**, Hangzhou, China
*M.S. Candidate in Computer Science and Technology* Sep 2010 - Jun 2011
*Bachelor of Engineering in Software Engineering* Sep 2006 - Jun 2010

- Advisor: Xujia Qin
- Thesis: Natural scene construction and rendering of rain and snow

## RESEARCH EXPERIENCE

**Purdue University VACCINE Lab**
*Graduate Research Assistant with Prof. David S. Ebert*

**FeatureExplorer: Interactive Feature Selection and Exploration of Regression Models for Hyperspectral Images** Aug 2016 - Present

- Utilized hyperspectral images to predict the biomass of sorghum varieties
- Improved the performance of prediction based on a visual analytics framework that supports interactive feature selection of different machine learning models
- Integrated multiple feature ranking algorithms and visual representations to expedite identification of key subset of features

**MetricsVis: Performance Evaluation and Analysis for Law Enforcement Officers** Jun 2015 - Present

- Developed a visual analytics framework to support effective organizational performance evaluation
- Collaborated with law enforcement officers to identify requirements for performance evaluation
- Designed visual representations to support the exploration of performance at and between multiple levels of the organizational hierarchies

**Route Packing: Position-Accurate Visualization of Geographic Route Networks** Jan 2015 - Dec 2015

- Designed novel visualization technique for displaying position-accurate routes on geographic maps while preserving identity and directionality of individual routes
- Applied linear kernel density estimation and thinning algorithm to extract the skeleton of route network and adopted metro-line crossing minimization algorithm to reduce visual clutter
- Conducted a crowdsourced user study to investigate route tracing performance with road networks visualized using the route packing technique

**VASA: Interactive computational steering of large asynchronous simulation pipelines for societal infrastructure** June 2013 - Dec 2014

- Developed a visual analytics framework to support asynchronous simulation pipeline of severe weather, critical infrastructure, and supply chain
- Integrated high precision distributed simulation models and coarse local approximations

**Tufts University**
*Master Project with Prof. Remco Chang*

**Modeling User Interactions for Complex Visual Search Tasks** Sep 2011 - May 2013

- Performed an online user study to collect users' mouse interactions during searching task
- Extracted interaction features using n-grams and then classified users' searching strategies by decision trees and SVM

## Teaching Experience

**Teaching Assistant for Purdue's Introduction to Visual Analytics** Fall 2018

- Prepare paper reading list for popular topics in visual analytics
- Advised students on course projects; grading paper summaries, course project papers and peer reviews, and exams

**Teaching Assistant for Tufts's Introduction to Programming for Business** Spring 2012

- Lab instructor for Visual Basic NET framework application, VBA Macro for EXCEL
- Tutorial instructor for labs and assignments; grading codes and exams

## Selected Publications

**J. Zhao**, M. Karimzadeh, H. Xu, A. Malik, S. Afzal, G. Wang, E. Elmqvist, and D. S. Ebert, "Route Packing: Geospatially-Accurate Visualization of Route Networks", *In Proceedings of the 53rd Hawaii International Conference on System Sciences (HICSS-53)*, 2020.

**J. Zhao**, M. Karimzadeh, L. S., Snyder, C. Surakitbanharn, Z. C. Qian, and D. S. Ebert, "MetricsVis: A Visual Analytics System for Evaluating Employee Performance in Public Safety Agencies", *IEEE Transactions on Visualization and Computer Graphics*, 2019.

M. Khayat, M. Karimzadeh, **J. Zhao**, and D. S. Ebert, "VASSL: A Visual Analytics Toolkit for Social Spambot Labeling", IEEE Transactions on Visualization and Computer Graphics, 2019.

**J. Zhao**, M. Karimzadeh, A. Masjedi, T. Wang, X. Zhang, M. M. Crawford, and D. S. Ebert, "FeatureExplorer: Interactive Feature Selection and Exploration of Regression Models for Hyperspectral Images", *IEEE VIS 2019 Short Papers*, 2019.

A. Masjedi, **J. Zhao**, A. M. Thompson, K.W. Yang, J. E. Flatt, M. M. Crawford, D. S. Ebert, M. R. Tuinstra, G. Hammer., and S. Chapman, "Sorghum Biomass Prediction Using Uav-Based Remote Sensing Data and Crop Model Simulation," *IGARSS 2018 - 2018 IEEE International Geoscience and Remote Sensing Symposium*, Valencia, pp. 7719-7722, 2018.

**J. Zhao**, A. Malik, H. Xu, G. Wang, J. Zhang, C. Surakitbanharn, and D. S. Ebert, "MetricsVis: A Visual Analytics Framework for Performance Evaluation of Law Enforcement Officers," *2017 IEEE International Symposium on Technologies for Homeland Security (HST)*, Waltham, MA, 2017.

S. K. Badam, **J. Zhao**, S. Sen, N. Elmqvist, and D. S. Ebert, "TimeFork: Interactive Prediction of Time Series," *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems*, ACM, pp. 5409-5420, 2016.

Y. L. Wong, **J. Zhao**, and N. Elmqvist, "Evaluating Social Navigation Visualization in Online Geographic Maps," *International Journal of Human-Computer Interaction*, 31(2):118-127, 2015.

S. Ko, **J. Zhao**, J. Xia, S. Afzal, X. Wang, G. Abram, N. Elmqvist, L. Kne, D. V. Riper, K. Gaither, S. Kennedy, W. Tolone, W. Ribarsky, and D. S. Ebert, "VASA: Interactive Computational Steering of Large Asynchronous Simulation Pipelines for Societal Infrastructure," *IEEE Transactions on Visualization and Computer Graphics*, 20(12):1853-1862, 2014.

E. T. Brown, A. Ottley, **H. Zhao**, Q Lin, R. Souvenir, A. Endert, and R. Chang, "Finding Waldo: Learning about Users From Their Interactions," *IEEE Transactions on visualization and computer graphics*, 20(12):1663-1672, 2014.

## Honors and Awards

Honorable Mention for Compelling Narrative Debrief of VAST Challenge, IEEE 2015
Excellent Graduate awarded by Zhejiang Provincial Higher Education Council May 2010
Excellent Student Scholarship awarded by Zhejiang University of Technology 2007, 2008 and 2009
Outstanding Student awarded Zhejiang University of Technology Nov 2008