

Xinyi LIU

Redlands, CA 92373, 608-504-0842, xliu636@wisc.edu,
Portfolio: <https://xinyiholly.github.io/portfolio/home.html>
LinkedIn: <https://www.linkedin.com/in/xinyi-liu-7a9437129/>

WORK EXPERIENCE

- Software Product Intern**, ESRI, Redlands, CA May 2018 - Present
- Implemented cartogram algorithms to visualize area-scaled maps based on attribute data (Python, C)
 - Performed geometry manipulation of geographic features for perspective views (Python)
- Research Assistant**, Department of Geography, University of Wisconsin-Madison, Madison, WI Sep 2016 - May 2018
- Designed and implemented new density-based clustering algorithms – (Space-Time) VDBSCAN (Java, R, SQL)
 - Aggregated tweet data using multiple algorithms such as DBSCAN and VDBSCAN (Java, PostgreSQL)
 - Developed websites to effectively visualize aggregation results in 2D/3D maps and charts (AJAX, jQuery, D3, JSON)
- Engineer**, Augur Intelligence Technology Co. Ltd., Guangzhou, China Sep 2015 - Jun 2016
- Designed, implemented and tested new functions for web urban planning systems (ArcGIS, Oracle, Java, JavaScript)
 - Participated in customer research and customization of web planning products

EDUCATION

- GIS/Cartography**, M.S., University of Wisconsin-Madison, USA Sep 2016 - May 2018
- CS courses: Algorithm, Machine Learning, Artificial Intelligence, Data Structure, Advanced R (GPA: 4.0/4.0)
 - GIS courses: Spatial Computing, Web/Mobile App Development, UI/UX Design (GPA: 4.0/4.0)
- Earth Information Science and Technology**, B.S., Sun Yat-sen University, China Sep 2011 - July 2015

PROJECTS

- Optimization of the Midwest electric power system, UW-Madison May 2017 - Jan 2018
- Simplified road networks and programmed Dijkstra algorithm on them to find the shortest path between sites along the transmission lines (QGIS, Java, PostgreSQL)
- Improvement of Twitter gender classifier using user mobility features, UW-Madison Oct 2017 - Dec 2017
- Implemented Machine Learning models including Naïve Bayes Network, Random Forest, Ada Boost and Multi-Layer Neural Network (Python: scikit-learn)
 - Increased classification accuracy and recall despite a sparsity of relevant data (Java, Python)
- Geovisualization of historic U.S. flight delays, UW-Madison Mar 2017 - May 2017
- Developed dynamic visualization of an interactive map to mine flight delay patterns from flight status data (Node.js, AJAX, jQuery, D3)
- Android app development, for National GIS Skill Competition, China May 2014 - Nov 2014
- Led a four people group and won the Third Prize and the Innovation Award
 - Developed a mobile map app for campus navigation and social entertainment (MapGIS SDK, Java, XML)
- Predictive mapping of reservoir sections based on Markov Random Fields (MRF) Nov 2014 - Jun 2015
- Implemented a Markov Mesh Model to effectively capture spatial continuity of the reservoir geologic facies
 - Programmed statistical modeling methods such as General Linear Model and PCA (C++)
 - Transformed 2D geological cross sections into 3D models based on borehole data (C#, ArcGIS .NET)

PUBLICATION

- X. Liu, Q. Huang, Z. Li and M. Wu, “The Impact of MTUP to Explore Online Trajectories for Human Mobility Studies,” in Proceedings of the 1st ACM SIGSPATIAL International Workshop on Prediction of Human Mobility. ACM, Redondo Beach, CA, 2017.

TECHNICAL SKILLS

- Proficient in: Java, JavaScript, R, ArcGIS
- Familiar with: SQL, C++, Python, C, C#, HTML, CSS, XML, PostgreSQL, Oracle

HONORS & ACTIVITIES

- Petchenik Graduate Award (2nd Place for Cartographic Design), UW-Madison 2018
- \$500 Trewartha Research Grant, UW-Madison 2016 - 2017
- Merit Scholarship (3 times), Sun Yat-sen University 2011 - 2014
- Excellent Leadership in Student Union, Sun Yat-sen University 2014
- Volunteer in Environmental Protection Association, Guangzhou, China 2011 - 2012