

## **Xuan Shi, Ph.D.**

Department of Geosciences  
University of Arkansas  
Fayetteville, AR 72701

### **PROFESSIONAL PREPARATION:**

- B.S. in Geography, Hubei University. Wuhan, Hubei, China. 1988
- M.S. in Geography, Indiana Univ. of Pennsylvania. Indiana, PA. 2001
- Ph.D. in Geography, West Virginia University. Morgantown, WV. 2007

### **APPOINTMENTS:**

- Assistant Professor, Department of Geosciences, University of Arkansas. 08/2012 – current.
- Research Scientist @ Center for GIS in Georgia Tech. 08/2007 – 08/2012
- GIS Programmer and Analyst in the West Virginia GIS Technical Center. 08/2001 – 08/2007
- Graduate Assistant, Department of Geography & Regional Planning, IUP. 08/1999 – 08/2001

### **PRODUCTS:**

➤ Five products most closely related to the proposed project:

1. Shi, X., Huang, M., You, H., Lai, C. and Chen, Z. 2014. Unsupervised image classification over supercomputers Kraken, Keeneland and Beacon. *GIScience & Remote Sensing*. Volume 51, Issue 3, 2014. pages 321-338.
2. Shi, X., Lai, C., Huang, M. and You, H. 2014. Geocomputation over the Emerging Heterogeneous Computing Infrastructure. *Transactions In GIS*. Accepted.
3. Shi, X. & F. Ye. 2013. "Kriging interpolation over heterogeneous computer architectures and systems". *GIScience & Remote Sensing*. May 2013. 50 (2), 196-211.
4. Lai, C., Huang, M., Shi, X. and You, H. 2013. "Accelerating Geospatial Applications on Hybrid Architectures". *Proceedings of the 15th IEEE International Conference on High Performance Computing and Communications (HPCC 2013)*, pp. 1545-1552, Zhangjiajie, China, November 13-15, 2013. (Acceptance ratio: 208/710=29.3%)
5. Ye, F. and X. Shi. "Parallelizing ISODATA Algorithm for Unsupervised Image Classification on GPU". 2013. In Shi et al. (eds) *Modern Accelerator Technologies for Geographic Information Science*. Springer. November 2013.

➤ Five other significant products:

1. Chenggang Lai, Zhijun Hao, Miaoqing Huang, Xuan Shi, and Haihang You, "Comparison of Parallel Programming Models on Intel MIC Computer Cluster," in *Proceedings of Fourth International Workshop on Accelerators and Hybrid Exascale Systems (AsHES) as part of IPDPS*, pp. 925-932, Phoenix, AZ, May 19, 2014.

2. Shi, X. & M. D. Nellis. 2013. "Semantic Web and service computation in GIScience applications: a perspective and prospective". Geocarto International. April 2013. DOI:10.1080/10106049.2013.776644
3. Shi, X. 2013. The Semantics of Web Services: An Examination in GIScience Applications ISPRS Int. J. Geo-Inf. 2013, 2(3), 888-907; doi:10.3390/ijgi2030888
4. Shi, X. "System and Methods for Parallelizing Polygon Overlay Computation in Multiprocessing Environment". Pending patent submitted to USPTO with Serial No. 13/523,196. Sponsored by NSF CCF-1048162.
5. Shi, X. 2010. "High Performance Computing: Fundamental Research Challenges in Service Oriented GIS". Proceedings of the ACM GIS HPDGIS Workshop 2010.

## **SYNERGISTIC ACTIVITIES**

- Chair, SOA, SOC, and Middleware Committee, AAG Cyberinfrastructure Specialty Group (CISG). 2008-current. CISG Secretary. 2008-1010.
- Member of the Scientific Advisory Board and Programming Committee, Geocomputation 2015, 2013.
- Co-Chair, 2012 International Workshop on Modern Accelerator Technologies for GIScience (MAT4GIScience 2012) at GIScience 2012.
- Member of IEEE, Sigma Xi, ACM SIGSPATIAL, ACM SIGHPC, and AAG.
- Member in the Review Panel for NSF and NASA

## **COLLABORATORS & OTHER AFFILIATIONS:**

Collaborators (27): Luc Anselin (Arizona State University), Budhendra Bhaduri (ORNL), Heather Corliss (SDSU), Steve French (Georgia Tech), Hermann Fritz (GT-Savanna), Jean Mark Gawron (SDSU), Mike Goodchild (UCSB), Kevin Haas (GT-Savanna), Ruoming Jin (Kent State), Jay Lee (Kent State), Tim Nyerges (University of Washington), Sushil Prasad (GSU), Brian Spitzberg (SDSU), Ming-Hsiang Tsou (SDSU), Lynn Utery (USGS), Shaowen Wang (UIUC), Nancy Wilkins-Diehr (SDSC), Imam Xierali (AAMC), Ye, Xinyue (Kent State), Jiawen Yang (Georgia Tech), Chaowei Yang (George Mason University).

Graduate Advisors (6): Greg Elmes (WVU), Trevor Harris (WVU), Vasudevan Jagannathan (MedQuist), Ge Lin (UNMC), Duane Nellis (Texas Tech University), Ruth Shirey (IUP)

Graduate Students Advised/Supervised (13): Zhong Chen, Fei Ye, and Jian Zhao at Georgia Tech; Dinesh Agarwal, Xi He, Nick Mancuso, and Satish Puri at Georgia State University; Mat Peck, Rachel Linck, Bowei Xue, Sen Ma, Rebecca Rowland, and Craig Jauch at University of Arkansas.