Xun Li

Email: lixun910@gmail.com
Phone: 480-516-3753
Homepage: http://www.public.asu.edu/~xunli/

Summary

- 4 years of software development experience in industry (Alcatel-Lucent, Microsoft, Motorola)
- Enthusiasm for programming, problem solving and delivering great products
- Have strong willing to learn and passion in teamwork

Education

Ph.D. student at GeoDa Center 2012(expected)
Arizona State University, Tempe, AZ
M.E., Software Engineering 2006
Peking University, Beijing, China
B.S., Information Engineering 2003
Wuhan University, Wuhan, China

Skills and Specialties

- Software design (UML, design patterns) and development (C/C++, Python, JAVA, C#)
- Web-based services and application design and development (javascript, HTML4/CSS, .Net, JSP, PHP, J2EE, SOA, JSON, REST, Django, Apache, Ajax)
- iOS/iPad development
- MS SQL Server, Oracle, Oracle Realtime DB, MySQL (SQL programming)
- Multi-threading/Multi-processing (PTHREADS), distributed software development (CORBAR, JAVA RMI, MPI)
- Unix (Linux, Solaris, Unix Shell scripts, GCC, GDB, SVN), Windows (win32 and .Net)
- Information retrieval, data mining and machine learning on spatiotemporal data
- Intelligent Network software development (SS7/SIP based) and backend engineering

Work Experience (Software Development)

5/2011-Present, **GeoDa Center, ASU, Programmer**

(1) Develop an exploratory spatial data analysis app on iPad

- Read and render map files in local ESRI shapefile format
- Implement GIS functions: classified maps, LISA maps, density maps etc.
- Implement multi-touch brushing and linking across different maps (UIViews) in one screen
- Implement a REST based web based map services for iPad client.

(2) Use Python and wxWidget to design and develop a small fully functional GIS for spatial data analysis

- Use MVC, Observer Pattern, Factory Pattern, etc to design software.
- Use Python and wxWidget to implement all GIS functions from raw, no GIS or plotting library used

(3) Use multi-processing to performance optimize the generation of dynamic KDE maps for large-scale dataset, and computation of simulation-based pseudo p-values of local spatial autocorrelation indexes.

3/2006 - 7/2008, **Alcatel-Lucent, Employee/software engineer, Multimedia and Payment R&D dept, Beijing, China**

(1) Develop new features of distributed multimedia service for Verizon Wireless, U.S. (Unix Shell scripts, SLL, C++, Oracle Realtime Database, Solaris, SS7/SIP)

(2) Lead the development and delivery of a new Client-Server cross-platform charging platform of multimedia service for China Unicom, ShanDong. (JAVA, CORBAR, LDAP, Oracle Realtime Database)

(3) Develop new features of a web-based multi-media content management system for Bell Canada (JSP, EJB, Oracle database, BEA Weblogic server)

11/2005-3/2006, **Microsoft Research Asia, Intern/Programmer, Web Search and Mining group**

(1) Participant in a semantic content-based video search engine project, which was successfully demonstrated at Microsoft Research Techfest 2006 in Seattle

- Research on semantic video segmentation, video metadata and content-based ranking and presentation in video search.
- Designed and developed a novel web-based interactive hierarchical representation system of video content and relevant advertisement for this video search engine. (Ajax, C#, Asp.Net, MS SQLServer, C++)

9/2004 - 9/2005, **Motorola, Intern/Programmer, Global Telecom Solution Sector, Beijing, China**

(1) Developed and delivered a cell bases-station based telecom network proficiency analysis software used by hundreds Motorola telecom engineers. (VB.net, GDI+)

(2) Developed a new version of web-based knowledge sharing system used by hundreds Motorola telecom engineers. (ASP, javascript, MS SQLServer)

2008, **Xelerator**, (individual project), use JAVA and TELNET protocol to develop a desktop application to auto-record and auto-execute customizable UNIX shell scripts in multi-terminal consoles. This tool is invented for UNIX engineers to simplify and accelerate their daily work. https://code.google.com/p/xelerator. Features include:

- Regular expression based customization of recorded scripts,
- Multi-threading execution of automated scripts,
- Email notification of executions,
- Automated scripts sharing/uploading/download in a built-in FTP client.

2000 – 2003, **Self employed** during undergraduate studies

(1) Bid, designed, developed, deployed and maintained (3 years) a commercial B2C website for a consumer music electronics company with tens of thousands online registers. It made profit in first operational month. (Linux+Apache+Mysql+PHP). http://www.listenstyle.com/ (no longer exists anymore, but I have screen copies)

Research Projects on Data Mining and Machine Learning

8/2008-5/2011, **Geosimulation Research Laboratory, ASU, Research Assistant**

(1) Online geo-photo based hierarchical travel patterns explore and recommendation system. (use C++, Python, Ajax, JSON, Bing Maps APIs, Django)

- Developed a parallel crawler to fetch 36+ million geo-tagged photos from Panoramio.com using Python and MySQL.
- Use C++ to remove duplicated photos in study area from personal albums using SIFT features.
- Developed and integrated a *kd*-tree based large scale density based hierarchical clustering (OPTICS) algorithm, and an extensive sequential association rule algorithm for discovering movement patterns
- Use Python, Ajax, JSON, Bing Maps service and Django to implement an online travel patterns explore and recommendation system.

(2) Machine learning various human movement behaviors from massive trajectory data collected by TabletPC and GPS; simulating them in a 3D agent-based models. (use C++, Python, OpenGL)

- Developed a wxWidget based GUI program, using digital pen to track people's movement trajectories on TabletPC.
- Implemented a locally weighted regression model to learn movement behaviors from trajectory data.
- Use C++ and OpenGL to develop a 3D multi-agent based program to simulate human movements.
- Implemented 3D exoskeleton based moving characters in simulation using MoCap data. Implemented various locomotion algorithms for comparison: A*, social-force model, random walk, Brownian walk and Levy flights.

2008-2011, **Fun Projects, ASU**

(1) Estimating geolocation of photos and cameras using community contributed location and textual tagged photos.

- Use Python crawl photos in Hawaii area with geolocation and textual description from Panoramio.
- Use Python and NLTK to extract bag-of-tags via segmentation and stemming etc, and create a TF-IDF matrix.
- Use C# to extract SIFT features from photos, generate visual features for each photo by clustering SIFT features.
- Use Matlab to apply a sparse learning on textual and visual features to predict the region of unknown location photo.
- Use C++ and Bundler library to reconstruct 3D SIFT points and camera position of photos via Structure from Motion

(2) Mining customer opinions of restaurants from online reviews at Yelp.com

- Use Java to develop a multi-thread crawler to fetch reviews of restaurants in Yelp.com
- Use Python and NLTK to extract nouns/noun phrases and surrounding adjective words and phrases via segmentation, tokenizing, stemming, POS-tagging and chunking from reviews. Index them as features and evaluation of restaurants.
- Use Python and pointwise mutual information to compute the semantic orientation of evaluation of restaurant features.

(3) Unsupervised classification of emergent relief messages in 2010 Haiti earthquake

- Use Python and NLTK to do a term-document analysis on the content of messages, resulting a TF-IDF matrix. Use Matlab to train a SVM multi-class classifier to predict the possible types of messages.
- Use Baysian language predicting model to handle the type errors, and distinguish the English and Creole in messages.