Open PhD positions in mobile laser scanning and 3D surface reconstruction at Xiamen University, China

The PhD students will enter the PhD Programs in Computer Science and Technology or Information and Communication Engineering leading to the degree of PhD within a time frame of 3-4 years. The student will carry out scientific and technical tasks within the Xiamen University Laboratory for Remote Sensing & Vision Computing (RSVC Lab) either at the Department of Computer Science or at the Department of Communication Engineering, School of Information Science and Engineering, Xiamen University. The start date for this position is September 2013.

Background

The RSVC Lab develops, validates and applies innovative and robust techniques and system analysis approaches for the processing, interpretation, and analysis of geospatial data, including remotely sensed imagery and laser scanning point clouds. Applications fields are related to 3D urban mapping, environmental monitoring, post-disaster damage assessment, and mobile mapping of transportation infrastructure. The RSVC team's research is focused on the development of novel image/range data processing technologies which are of interest to our application fields. This research combines the knowledge of both laser scanning point cloud and digital camera image processing with novel analysis techniques aimed at deriving 3D spatial models of transportation infrastructure (e.g., port, airport, railway station, bus terminal). Adaptation of image processing techniques to very high accuracy mobile laser scanning point clouds collected by Riegl VMX-450, Tribmle MX8 and Optech Lynx systems, fusion of laser scanning point clouds with optical images, feature extraction, 3D surface reconstruction and fast GPU code implementation are some of the foci of the current work.

Required knowledge and skills

- Suitable applicants should have a master's degree or equivalent in Computer Science, Information Engineering, Geomatics (particularly photogrammetry and remote sensing) or other related analytical discipline.
- Experience in computer programming (C++, MATLAB, ENVI/IDL), image processing and analytical techniques for data analysis such as least-squares error modeling. Algorithms and software development will be central to the success of the research.
- Knowledge of image processing software (e.g., ENVI, PCI Geomatica, ERDAS Imagine) for optical remotely sensed data analysis and GIS software (e.g., ArcGIS) is an asset.
- The applicant should be a proactive and independent researcher, team player, adaptability to a multicultural environment, good written and spoken English.

Main duties

- To elaborate, implement, and validate novel and effective laser scanning point cloud processing and analysis methodologies supporting novel transportation applications developed at RSVC Lab;
- To contribute to the development of the RSVC team's point cloud processing libraries;
- To participate in the implementation of shared experiments and building of reference data sets;
- To participate in the organization of workshops;

- To collaborate with other research laboratories (e.g. through scientific collaboration agreements);
- To publish research results and case studies in peer reviewed literature.

We are inviting applications from outstanding candidates interested in contributing to our remote sensing and vision computing research activities. The successful candidate shall focus on the development of new and effective methodologies for the processing and analysis of mobile laser scanning point clouds. He/she will complement the team's expertise in point cloud processing, feature extraction, 3D surface reconstruction, and innovative transportation applications. The electronic application must contain a cover letter, CV, research plan (every two months), scanned copies of transcripts, publications and other relevant work, as well as 3 references. The application should be sent to Prof. Dr. Cheng Wang by email at cwang@xmu.edu.cn, **before 31 January 2013**.