

Proposal for Faculty Grant for International Connections

Sihong Xie (Computer Science and Engineering)

1 Goals for the visit

Online social networks and commerce have been fundamentally changing our life in many ways for years, and we can foresee that the changes will continue. Understanding the behaviors of users on online social network and commerce websites is one of the most important and useful research problems in data science research. For example, if we can understand the personal interests of a customer in restaurants by analyzing his/her tweets, then we can more precisely recommend new restaurants that the customer is most likely to visit. Another example is to use the behaviors and text data of the online users to detect reviewers who are hired to post fake reviews on e-commerce websites to promote or defame products. For the time being, most research on online user behavior analysis is done using data collected from a single online social network in one country, such as Twitter from US or Sina Weibo from China, but not both. It would be more useful to understand the fundamental commonalities and differences in online behaviors and linguistic patterns of users from different countries. The professional goal for the visit is to exchange ideas on social network text and user behavior analysis research between Prof. Xie and his collaborator, Prof. Zhang, in Beijing University of Posts and Telecommunications (BUPT), China. More specifically and importantly, the two researchers will merge data, ideas, algorithms and codes available in their research groups to depict a more precise picture of online user behaviors. The personal goal is to enhance a preexisting bond between the two research groups and to attract students, postdocs and visiting scholars to the CSE department of Lehigh. The visit will increase the visibility of Lehigh and CSE department, especially the campus-wide DataX Initiative in China.

2 Expected outcomes

In the short-term, the visit will produce numerous publications on top conferences in the field of data science, co-authored by professors and students from both Lehigh and BUPT. The outcome of the research will be added to a course that Prof. Xie is offering in the CSE department. An increasing number of quality master and PhD applicants from the hosting institutes can also be foreseen in the next few years. This will benefit the now fast-expanding CSE department (hired 3 in 2016 and plan to hire 2 in 2017). **In the long-term**, the visit will deliver preliminary research results, build up Prof. Xie's research credibility and capability, and eventually help him attract external funding from agents such as NSF for years to come. Prof. Xie hopes to promote Lehigh's reputation and establish a steady stream of incoming students from the hosting institute.

3 Nature of interaction

The following interactions are planned during the visit:

- An information session to introduce Lehigh, CSE department and the DataX Initiative. The research interest and activities of the DataX related faculty members will be included.
- Several seminars focusing on Prof. Xie's research areas and recent publications to disseminate his findings on the subjects.
- Presentations by Prof. Zhang and his students on their research areas.
- Meetings with students in the hosting colleague's research group. We will discuss technical details of the on-going projects and also ideas to be pursued in the future.
- Answer questions from students in the hosting institute who are interested in applying for the CSE graduate program or visiting Lehigh.

4 Information of the foreign academic institution(s) and faculty member(s)

Beijing University of Posts and Telecommunications (BUPT): *(from Wikipedia) “ is one of the 73 Key National Universities under the administration of the Chinese Ministry of Education. ... It was the tertiary institution for teaching and research in the post and telecommunications fields....BUPT enjoys a nationwide reputation for innovation and excellence in advanced research and learning in information and communication technology. It serves as one of the most important teaching and research bases for information technology and telecommunication industry in China.”*

Prof. Xi Zhang from the School of Computer Science of BUPT will host Prof. Xie.

5 Pre-trip planning and preparation

An invitation letter is attached. Materials, including slides and posters about Lehigh, the CSE department, Mountaintop campus and the DataX Initiative will be requested or prepared. Meetings with CSE faculty will be held to learn their most recent research interest, which will be built into the introducing slides. Slides regarding my research will also be prepared to give tutorials and talks. Prof. Zhang and I will communicate before the trip to identify the actual travel time and activities.

6 Post-trip follow-up

After the trip, Pro.Zhang and I will continue to co-supervise Lehigh and BUPT students in our groups and share ideas and datasets. The required written trip report will be submitted to the specified office and personnel. Oral presentations will be given to fellow faculty to share my experience regarding how to maximize the outcome of the funded trip.

7 Budget

- Round trip air ticket: \$1406;
- Lodging rate: \$150/day for 14 days (2 weeks);
- **Total cost:** \$3506 (Prof. Xie will cover the additional cost).

Jan 29, 2017
Beijing, China

Dear Dr.Xie,

I am writing to extend an official invitation to you to spend time with my research group at Beijing University of Posts and Telecommunications (BUPT), China. I have been working on social network and user behavior analysis for more than three years now. Your expertise on data mining and text analytics will greatly complement our research efforts.

Social network and user behavior analysis is a well-studied topic, especially in the context of online social networks and e-commerce. Now I want to extend my research to include advanced text mining techniques to analyze datasets from a different cultural background. I believe that there are some general and specific aspects of the individual datasets that we can look into, and it will lead to novel and useful research topics.

During your visit, we will organize several seminars and tutorials for us to learn the recent findings of each of our groups. My students can also discuss with you regarding technical details about text mining. You can also introduce your university and department as some of our students are interested in applying the graduate programs at your institute.

I look forward to building a close and long-term academic relationship between our research groups. We can discuss about the arrangement of your trip in the near future.

Sincerely

A handwritten signature in black ink that reads "Xi Zhang". The signature is written in a cursive, flowing style.

Xi Zhang, PhD
Assistant Professor,
Beijing University of Posts and Telecommunications (BUPT)