Visualization and Data Analytics (ViDA) lab
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Ke Yang

PhD Candidate, Computer Science, New York University

Education

Ph.D. in Computer Science, New York University, New York, U.S.A
Advisor: Julia Stoyanovich *January, 2019 - June, 2021 (Expected)*

Ph.D. in Computer Science, Drexel University, Philadelphia, U.S.A
Advisor: Julia Stoyanovich *September, 2015 - December, 2018*
GPA: 3.98/4.0

M.S.E in Computer Science, Beijing Technology and Business University, Beijing, China
Advisors: Qian Mo and Zhongming Han *September, 2012 - June, 2015*
GPA: 3.51/4.0

B.Eng. in Software Engineering, Beijing Technology and Business University, Beijing, China
Advisor: Qian Mo *September, 2008 - June, 2012*
GPA: 3.45/4.0

Research Interests

Responsible data and knowledge management, non-discriminatory machine learning, data and knowledge mining, social network analysis
Current work focus on fairness / diversity in ranking-related applications with the goal to mitigate the effect of discrimination against groups that are externally protected by national laws

Research Projects

Data, Responsibly
Supervisor: Prof. Julia Stoyanovich *December, 2015 - Present*

- *Encoding fair schemes in ranking-related applications and designing models to mitigate effect of bias towards sub-groups such as females in job hunting or African-American people in the prediction of criminal activities. More: DataResponsibly*
- *Designing diverse schemes for online set selection*
- *Making ranking-related decision procedures more transparent for users. Application: RankingFacts*

Analyzing and Preventing Spam Information in Online Shopping Websites
Supervisors: Prof. Zhongming Han and Qian Mo *May, 2013 - May, 2015*

- *Analyzed the profiles and behaviors of the large spamming groups in online shopping websites, such as Taobao.com and JD.com*
- *Designed a model employing graphical features extracted from users relationships to efficiently detect the large spamming groups in online shopping websites*
- A survey paper accepted in Journal of Software, one of the Chinese premier peer-reviewed journal in Computer Science
- A paper accepted in Chinese Journal of Computers, one of the Chinese premier peer-reviewed journal in Computer Science
- Applied a China invention patent for the above detection model

Detecting and Predicting Hot Topics in Social Network based on Analyzing Human Behavior Pattern
Supervisor: Prof. Zhongming Han *December, 2012 - June, 2013*

- Designed a new probabilistic graphical model to efficiently identify Sina Weibo spamming users by combining the profiles and behaviors features from users in Sina Weibo (Chinese version of Twitter)

- Compared the performance with the baseline SVM model

- Paper accepted in Journal of Embedded System

Publications

Ke Yang, Julia Stoyanovich, and Vasilis Gkatzelis, "Balanced ranking with fairness and diversity constraints", in submission.

***Ke Yang**, Julia Stoyanovich, Abolfazl Asudeh, Bill Howe, HV Jagadish, and Gerome Miklau, "A Nutritional Label for Rankings" (demo) to appear in Proceedings of the 2018 ACM International Conference on Management of Data (SIGMOD 2018), Houston, USA*

*Julia Stoyanovich, **Ke Yang**, HV Jagadish, "Online Set Selection with Fairness and Diversity Constraints" in Proceedings of the 21th International Conference on Extending Database Technology (EDBT 2018), Vienna, Austria, DOI:10.5441/002/edbt.2018.22*

***Ke Yang**, Julia Stoyanovich, "Measuring Fairness in Ranked Outputs" in Proceedings of the 29th International Conference on Scientific and Statistical Database Management (SSDBM 2017), Chicago, USA, DOI:10.1145/3085504.3085526*

*Zhongming Han, **Ke Yang**, Xusheng Tan, "Analyzing Spectrum Features of Weight User Relation Graph to Identify Large Spammer Groups in Online Shopping Websites" in Chinese Journal of Computers, 40(4): 939-954 (2017) (in Chinese), DOI:10.11897/SP.J.1016.2017.00939*

*Zhongming Han, **Ke Yang**, Fengmin Xu, Dagao Duan, "Probabilistic Graphical Model for Detecting Spammers in Microblog Websites" in Journal of Embedded System, 8(1): 12-23 (2016), DOI:10.1504/IJES.2016.073747*

*Qian Mo, **Ke Yang**, "Overview of Web spammer detection" in Journal of Software, 25(7): 1505-1526 (2014) (in Chinese), DOI:10.13328/j.cnki.jos.004617*

*Kai Wang, **Ke Yang**, "A method and application system of detecting web spammers" in China Invention Patent, (2015) (in Chinese), No. CN201510012860*

Teaching Experience

***Teaching Assistant** - Drexel University*
- CS500 Fundamentals of Databases: January, 2017 - March, 2017
- CS461 Database Systems: March, 2017 - May, 2017

Work Experience

Intern at Elite & Resource (start-up company)
***Research engineer**, Supervisor: Peng Sun* *November, 2014 - August, 2015*
Analyzed flood disaster data from China Institute of Water Resources and Hydro-power Research
Designed a model to predict the water flow rate of small watershed torrents and encoded the model as a component of national watershed data management system

Software Projects & Skills

***Ranking Facts** full-stack development: Python, Django, JavaScript, JQuery*
***Data Synthesizer** front-end development: JavaScript, JQuery*
***Researcher Questionnaire** database design and front-end development: PHP, Drupal, MySql*
***DataResponsibly** website development: Jekyll*
***Other Used Languages**: Java, C, C++, MATLAB and R*