Jiaxuan Li

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Education

Harbin Institute of Technology，Shenzhen, China

M.S., computer science — Sep. 2017 to Now
GPA: 3.1 / 4.0, Top 30%
Supervisor: Dr. Philippe Fournier-Viger

Hai Nan University, Hainan, China

B.S., computer science — Sep. 2013 to Jul. 2017
GPA: 3.67 / 4.0 (88.2 / 100), Top 3%
Supervisor: Dr. Yucong Duan

Publications

- A Survey of Pattern Mining in Dynamic Graphs. Philippe Fournier-Viger, Ganghuan He, Chao Cheng, **Jiaxuan Li**, Jerry Chun-Wei Lin, Unil Yun. *WIREs Data Mining and Knowledge Discovery, Wiley*, 2019. **Submitted.**

- Efficiently Extracting Cost-Effective patterns from Sequential Event Log. Philippe Fournier-Viger, **Jiaxuan Li**, Jerry Chun-Wei Lin, Tin Truong Chi, R. Uday Kiran. *Knowledge-Based Systems (KBS), Elsevier*, 2019. **Under second round review.**

- Discovering and Visualizing Patterns in Utility Sequences. Philippe Fournier-Viger, **Jiaxuan Li**, Jerry Chun-Wei Lin, Tin Truong Chi. *Proc. 21st Intern. Conf. on Data Warehousing and Knowledge Discovery (DAWAK), Springer*, 2019.

- Discovering low-cost high utility patterns. **Jiaxuan Li**, Philippe Fournier-Viger, Lin, Jerry Chun-Wei Lin, Tin Truong Chi. *1st International Workshop on Utility-Driven Mining (UDM), in conjunction with the KDD 2018 conference, ACM press*, 2018. **Spotlight presentation.**

- Empirical rules-based view abstraction for distributed model driven development. Yucong Duan, **Jiaxuan Li**, Qiang Duan, Lixin Luo, and Liang Huang. *International Journal of Computational Science and Engineering*, 2018.

Research & Industry Experience

- **Harbin Institute of Technology, Shenzhen** — Mar. 2018 to Now
  Mentor: Dr. Philippe Fournier-Viger
  - **Cost-effective pattern mining** — Mar. 2018 to Jul. 2019
    - Mining cost-effective pattern from event logs in E-learning to provide insights about how to utilize the learning materials.
    - Combined a cost model into high utility sequential pattern mining considering the resources, effort, time or cost required to apply the patterns for getting a desirable utility.
    - Designed statistical measures to assess the correlation between utility and cost for the needs of different applications in terms of the type of utility (binary or numeric).
    - Integrated buffer structure into Prefixspan algorithm and designed pruning strategy to improve algorithms'

performance in terms of memory usage and execution time.

- **Cost-effective pattern mining from heterogeneous data source** Jul. 2019 to Now
  - Mining guidance patterns in e-learning from heterogeneous data source for specific group of users.
  - Combining users' attributes, such as personal information and educational background, with their learning activities.
  - Clustering users based on their attributes and mining cost-effective patterns from their sequences of activities respectively to assist different group of users use materials efficiently.
  - Adding standard variance of each pattern's cost, besides average cost, to fairly evaluate how costly this pattern is useful for slow and fast learners.
  - Currently designing the model and searching potential datasets for testing.

- **Noah'Ark Lab, Huawei Technologies** Aug. 2019 to Now

  Mentor: Dr. Min Zhou
  - Spatial-temporal sequence pattern mining in telecommunication network to compress alarm records, identify important alarms, and locate root-cause alarms.
  - Using dynamic attributes graph as an approach to mine important sequences of alarms that have a higher priority to be responded from various network equipment, meanwhile keeping the topology of the network.
  - Designing correlation measure and generating potential correlated sequence rules of alarms to identify the root-cause alarms.
  - Currently pre-processing data and analyzing data, including the information of alarms' occurrence time, domain, name, source and network topology information.
- **2012 Lab, Huawei Technologies** Jun. 2019 to Aug. 2019

  Mentor: Dr. Zixian Zhang
  - Designed, implemented and tested a function for automatically extracting and checking the CAD drawings' content about servers to improve the manual inspection's accuracy.
  - Analyzed about 5 types of drawings. Extracted their components' data structure using ActiveX and mined different components' crucial features, respectively.
  - Based on those features, implemented algorithms to structurally extract contents in specified areas, compared those information with the official documents, and finally generated a detailed verification report.
  - Checked the operating specifications of the drawings, such as the intersection between texts and lines, missing arrows, and manual errors, such as the absence of a component's description or missing a component that should be contained in the drawing.
  - Tested about 100 drawings, and now this feature was integrated into their production system.

Selected Awards

- Outstanding graduates of Hainan University, 2017.
- Mathematical Contest in Modeling Certificate of Achievement, Honorable Mention, 2016.