

Kaiyuan Zhang

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EDUCATION

The University of Texas at Dallas

Master of Science in Computer Science

Dallas, TX

Expected May 2020

Thesis: Adversarial Learning on Graphs

Chang'an University

Bachelor of Engineering in Network Engineering; GPA: 3.60/4.0

Xi'an, China

Aug 2013 - Jul 2017

PUBLICATIONS

- Visualizing Large-scale High-dimensional Data via Hierarchical Embedding of KNN Graphs. (Revising)
- DRGraph: An Efficient Graph Layout Algorithm for Large-scale Graphs by Dimensionality Reduction. (Revising)
- X. Luo, Y. Yuan, **K. Zhang**, J. Xia, Z. Zhou, L. Chang, T. Gu, "Enhancing statistical charts: toward better data visualization and analysis", in Journal of Visualization (JOV), 2019.

EXPERIENCE

Research Intern

University of Illinois at Urbana-Champaign

Urbana-Champaign, IL

May 2019 - Present

- **Deep graph learning:** on going

Research Assistant

The University of Texas at Dallas

Dallas, TX

Nov 2018 - Present

- **Adversarial machine learning:** Adversarial Learning on Graphs, on going

Research Intern

State Key Laboratory of CAD&CG, Zhejiang University

Hangzhou, China

Feb 2017 - Aug 2018

- **Graph embedding & Visualization:** Developed a large-scale graph embedding based algorithm for 2D data visualization, which can embed high dimensional graph-structured data into low dimension in a sub-linear time and visualize in 2D.

PROJECTS

- **Efficient graph layout for large-scale graphs:**
 - Approximate pairwise node distances by a sparse distance matrix and estimating the gradient by using the negative sampling technique implemented in C++
 - Accelerate the optimization process through a multi-level layout scheme
- **High-Dimensional data reduction and acceleration:**
 - Accelerate the construct of knn graph by kd-tree based on LargeVis
 - Propose an algorithm with sub-linear computation complexity by sharing the gradient between adjacent data points
- **Vision-based pedestrian detection:** Chinese student research innovation training program
 - Develop algorithms for image feature extraction and feature fusion using C++

- Use SVM classifier, DS evidence theory to detect the pedestrian in the given image
- **National college students cloud computing application innovation contest:**
 - Implemented the algorithm for log analysis based on MapReduce and optimized algorithm performance with Scala
 - Subgraph isomorphism query based on Spark

SKILLS

- **Programming:** C/C++, Python, Matlab, LaTeX
- **Tools:** Vim, Git, Subversion, Docker, Neo4j
- **Operation systems:** Ubuntu Linux
- **Libraries:** PyTorch, TensorFlow, Scikit-Learn, Numpy, Pandas, Requests, Jupyter, PIL
- **Languages:** English (fluent), Chinese (native)

ADDITIONAL EXPERIENCE & ACHIEVEMENTS

- **Excellent Bachelor Thesis Award**, which is awarded to students with excellent graduate thesis, top ~5% students.
- **China National Scholarship**, which is the highest level of scholarship set by the government of China, top ~1% students.
- Won *Third Place in National College Students Cloud Computing Application Innovation Contest* out of more than 1000 students at **2016**
- Won *Province Second Place in China Mathematical Contest in Modeling* out of 9773 teams (29319 students) at **2015**