

Xin-Li HOU

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EDUCATION

School of Computer Science, Zhejiang University

Sep 2016- present

B.E. in Digital Media Technology, Overall GPA: 3.84/4.0

RESEARCH EXPERIENCES

Scalable Visualization | Massachusetts Institute of Technology | Research Assistant

Apr 2019 - present

Advisor: Mike Stonebraker, Professor at CSAIL, MIT

- Authored templates and high-level APIs to simplify the process of complicated visualization authoring, including pie charts, tables, treemaps, and circle packings
- Implemented streaming parsing and spatial computation of hierarchical data to support datasets exceeding the memory limitations of a computer
- Created a set of templates on top of my hierarchical back-end engine with polymorphism, supporting visualizations with an unlimited zoom level of detail, and transitions and supplementary tools that are adapted to the templates.
- Raised a new padding method for treemap to support padding for nodes exceeding memory limitation
- Worked with industry on datasets with more than 2 million data points, raised a novel aggregate method to support response time within 500ms. The system is currently in the process of commercial deployment.

Automatic Multi-scale Visualization | Massachusetts Institute of Technology | Research Assistant

July 2019 - present

Advisor: Mike Stonebraker, Professor at CSAIL, MIT

- Co-authored a paper of automatic multi-scale visualization generation to be submitted to IEEE TVCG.
- Authored multiple templates and rendering modes for the system. (Radar chart on designated attributes, Pie chart for multi-class aggregation)
- Improved aggregate process to support multiple aggregation types and the display of convex hulls on clusters.
- Helped with language/API design and algorithm improvement.

Football Data Study | Zhejiang University | Research Assistant

Apr 2018 - Feb 2019

Advisor: Yingcai Wu, Researcher at CAD&CG State Key Lab, Zhejiang University

- Co-authored a paper on automatic clustering and recognizing formation based on a temporal convolutional network that was submitted to ijcai 19.
- Mined patterns from the middle-layer parameters of a neural network using PCA and different clustering methods.
- Fit a Logistic Regression Model from kdd17 based on sklearn and pandas for predicting pass success rate and menace, reaching an accuracy of 88% and 96% respectively.
- Implemented a Pattern Abstract Model from kdd18 using event flow, hierarchical agglomerative clustering and prefix span from scratch for the recognition and extraction of spatial-temporal attack patterns.

Visual Analytics of Football Video | Zhejiang University | Research Assistant

Apr 2018 – Apr 2019

Advisor: Yingcai Wu, Researcher at CAD&CG State Key Lab, Zhejiang University

- Designed and implemented a visual analytic system with three coordinated-view to help accurately track player movement.
- Worked with professional players and coaches; work presented to officials of the Chinese Football Association.
- Responsible for system design, view coordination and implementing the Video Interface and player components.
- Led a team with four members; arranged meetings, workloads, worked with graduate students in the lab.

SKILLS

Programming Languages: C/C++, Python, Matlab, PHP, HTML/CSS, JavaScript, Java, D3.js

Software: Microsoft Office, Photoshop, Premier

Native in Chinese, proficient in English (TOEFL 110 (Reading 29, Listening 28, Speaking 25, Writing 28)).

GRE: Verbal-162 Quantitative-168 AW-3.5