**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