Yuancheng Shen

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Education

- **Shandong University** — Shandong, China
  Mater of Technology - Computer Science and Technology — *Sep. 2021 - Jun. 2024(expected)*
  Advisor: Prof. Yunhai Wang
  GPA Overall/ Major: 3.5/3.7
  Courses: *Human-Computer Interaction, Interactive Data Analysis System, Artificial Intelligence, Machine Learning*

- **Jiangsu University of Science and Technology** — Jiangsu, China
  Bachelor of Technology - Computer Science and Technology — *Sep. 2017 - June 2021*
  GPA Overall/ Major/ Ranking: 3.8/ 3.9/ Top 2%
  Courses: *Operating Systems, Data Structures, Analysis Of Algorithms, Computer Graphics, Networking, Databases*

Publications

[P1] Yunhai Wang*, **Yuancheng Shen***, Yue Zhao, Haoyan Shi, Bongshin Lee. (2023). Authoring Data-Driven Chart Animations. In *IEEE Transactions on Visualization and Computer Graphics.* (Co-first author and the first is the professor, In Proceedings).

[P2] **Yuancheng Shen**, Rui Ban, Xin Chen, Runduo Hua, Yunhai Wang. (2023). Anomaly Detection Algorithm for Network Device Configuration based on Configuration Statement Tree. In *Computer Science.* (Accepted in Mar. 2023; To appear in Nov. 2023).

Research Experience

- **Exploring SVG Markup Standards for Enhanced Data Visualization** — Shandong University
  Student Leader |Advisor: Yunhai Wang and Bongshin Lee — *Aug 2023 - present*
  - **Description**: This research project is dedicated to the exploration of standardized SVG markup guidelines with a strong emphasis on enhancing the readability, versatility, and provision of unified standards for grammar designers, all geared towards improving the quality and accessibility of data visualizations.
  - **Contribution**: I contributed by generating innovative ideas, developing a comprehensive design strategy, and conducting thorough literature reviews to inform our work on standardized SVG markup guidelines.

- **PenTouchSelector: Selecting Elements in SVG Charts** — Shandong University
  Student Leader |Advisor: Yunhai Wang and Bongshin Lee — *Jan 2023 - present*
  - **Description**: The research concentrates on a touchscreen-based SVG selection system with advanced modeling for accurate element selection and interactive recommendations in complex data charts.
  - **Contribution**: Proposed innovative ideas and models for distinguishing lasso and tracing methods, ensuring precise identification of selected elements for each method; Implemented interactive user feedback to handle uncertain selections, allowing users to make their choices.

- **A Visual Grammar for Charting and Reverse Generation** — Shandong University
  Participant |Advisor: Yunhai Wang — *Dec 2022 - present*
  - **Description**: The research concentrates on a static data visualization grammar for generating SVG charts and a reverse-engineering algorithm to automatically infer syntax expressions and data from existing SVG charts, streamlining the process of chart customization for easy and seamless modifications.
  - **Contribution**: Participated in discussions regarding the design of the visualization grammar and also did part of coding work; Contributed valuable insights to the idea of reverse-engineering during collaborative discussions.

- **Authoring Data-Driven Chart Animations [P1][Link]** — Shandong University
  Student Leader |Advisor: Yunhai Wang and Bongshin Lee — *Jun 2022 - Jun 2023*
  - **Description**: The research concentrates on an intuitive tool that empowers users without programming skills to author expressive chart animations through visual language, interactive editing, and smart recommendation strategies.
  - **Contribution**: Researched data animation syntax and tools; Proposed and implemented innovative ideas in consultation with two advisors; Took responsibility for paper writing and illustrations.
  - **Achievement**: Developed an interactive tool based on Canis syntax, enabling users to author data-driven chart animations with ease; Written a research paper.

- **Anomaly Detection for Network Device Configuration [P2][Link]** — Shandong University
  Student Leader |Advisor: Yunhai Wang — *Sep 2021 - May 2022*
  - **Description**: The research concentrates on configuration anomaly detection using over 10,000 configuration files from five manufacturers.
  - **Exploration**: Conducted an in-depth exploration of anomalies in document syntactic structure using big data analysis and statistical methods and offered comprehensive solutions.
  - **Solution**: Pioneered the development of a configuration statement trees and applied clustering analysis to detect rare anomaly patterns, enabling automated detection as a substitute for manual inspection.
  - **Achievement**: Achieved exceptional 85%+ accuracy in anomaly detection with the aid of anomaly samples and gave the modifications methods; Written a research paper and applied for a patent.

Selected Honors and Awards

- Postgraduate Excellent Student Award Fund, Shandong University *Oct, 2021*
- Outstanding Thesis Award, Jiangsu University of Science and Technology *Jun, 2021*
- Outstanding Graduates Award, Jiangsu University of Science and Technology *Jun, 2021*
- 1st Prize Scholarship, Jiangsu University of Science and Technology *Oct, 2019*
- 1st Prize in Higher Mathematics Competition(Top 0.05%), Jiangsu *Aug, 2018*

Academic Engagements

- **Review for an academic paper** Qingdao, China
  Participated in reviewing a paper on interactive time-series data visualization *May 2023*
- **Participated in *The Geometric Design and Computing Conference*** Qingdao, China
  Participated in the event, received experts and scholars & volunteered other conference services *Aug 2022*
- **Participated in *The China Visualization and Visual Analytics Conference*** Xining, China
  Participated in the event *Jul 2022*

Skills

- **Languages**: GRE 329(Verbal 159, Quanitative 170, Writing 4.5), TOEFL 107
- **Tools**: TypeScript, JavaScript, NodeJs, Python, SQL, C++, R, Latex, Adobe Illustrator, PhotoShop
- **Soft Skills**: Leadership, Event Management, Writing, Public Speaking, Time Management