Linhao Meng

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Research interests

Data Visualization, Visual Analytics, Explainable AI, Machine Learning

Education

2020 – 2024 **Eindhoven University of Technology** – Eindhoven, the Netherlands
Ph.D. candidate in Computer Science.

2018 – 2020 **Zhejiang University** – Hangzhou, China
MSE in Software Engineering.

2014 – 2018 **Zhejiang University** – Hangzhou, China
B.S. in Geographic Information Science.

Publications

2023 **Class-constrained t-SNE: Combining Data Features and Class Probabilities**
Linhao Meng, Stef van den Elzen, Nicola Pezzotti, Anna Vilanova.
IEEE Transactions on Visualization and Computer Graphics (IEEE VIS 2023).

2022 **ModelWise: Interactive Model Comparison for Model Diagnosis, Improvement and Selection**
Linhao Meng, Stef van den Elzen, Anna Vilanova.
Computer Graphics Forum (EuroVis 2022).

Visual Reasoning for Uncertainty in Spatio-temporal Events of Historical Figures
Wei Zhang, Siwei Tan, Siming Chen, **Linhao Meng**, Tianye Zhang, Rongchen Zhu, Wei Chen.
IEEE Transactions on Visualization and Computer Graphics (TVCG).

2021 **VADAF: visualization for abnormal client detection and analysis in federated learning**
Linhao Meng, Yating Wei, Rusheng Pan, Shuyue Zhou, Jianwei Zhang, Wei Chen.
ACM Transactions on Interactive Intelligent Systems (TiiS).

VisBOL2—Improving Web-Based Visualization for Synthetic Biology Designs
Benjamin Hatch, **Linhao Meng**, Jeanet Mante, James A McLaughlin, James Scott-Brown, Chris J Myers
ACS Synthetic Biology.

Bubble storytelling with automated animation: a Brexit hashtag activism case study
Noptanit Chotisarn, Junhua Lu, Libinzi Ma, Jingli Xu, **Linhao Meng**, Bingru Lin, Ying Xu, Xiaonan Luo, Wei Chen
Journal of visualization.

2018 **Visual Abstraction of Large Scale Geospatial Origin-Destination Movement Data**
Zhiguang Zhou, **Linhao Meng**, Cheng Tang, Ying Zhao, Zhiyong Guo, Miaoxin Hu, Wei Chen.
IEEE Transactions on Visualization and Computer Graphics (VAST 2018).

Research experience

Sep. 2020 – Present

Visualization cluster of Eindhoven University of Technology (TU/e)
Mentor: Professor Anna Vilanova (TU/e).
I specialize in designing and developing visual interactive tools to enhance human's ability to understand machine learning data and models. An example about our model comparison tool can be found here.

May 2020 – Aug. 2020

National Resource for Network Biology (NRNB)
Mentor: Professor Chris Myers (University of Utah).
I integrated a sequence visualization plugin coordinated with SBOL visual standard into SynBioHub under NRNB in Google Summer of Code Program. Code available here.

Feb. 2018 - Jun. 2020

Visual Analytics and Intelligence Group of Zhejiang University (ZJU)
Mentor: Professor Wei Chen (ZJU).
I have actively participated in research projects about visual analytics for federated learning, geospatial data, and digital humanities. Additionally, I have been involved in practical projects that encompass the visualization of financial data and news.

Jul. 2016 - Sep. 2016	**Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (CAS)**

Mentor: Professor Xiaomei Yang (CAS).

I extracted road information from high-resolution remote sensing images based on Snake model.

Industry experience

Aug. 2019 - Apr. 2020	**Cisco System (Software Engineer Intern)** – San Jose, the United States

Mentor: Ashutosh Malegaonkar

I designed a visualization dashboard used for project progress management in Cisco DevNet Department. Besides, I participated in some prototype building projects, e.g., using Unity and 3d visualization for augmented reality, using Raspberry Pi to simulate robot control.

Teaching experience

Q2(Nov. - Jan.) 2020 - 2023	**Teaching assistant, JBI100: Visualization (TU/e)**

This course is enrolled by more than 200 students each year. I am responsible for grading exams and group reports, as well as answering students' questions.

Mentoring experience

Feb. - Nov. 2023	**Aishvarya Viswanathan**

CS master student, TU/e

Master project - VIL-R: A learning system to aid interactive labeling by identifying user strategies

Mar. - Oct. 2022	**Chicheng Liu**

CS master student, TU/e → Software Engineer, Alibaba

Master project - ObliqueTreeVis: Visual Analytics for Interpreting Oblique Decision Trees

Feb. - Jul. 2021	**Emmie Bessems**

Undergraduate in data science, TU/e → MSc student in data science & AI, TU/e

Final Bachelor Project - Interactive Visualization Tool for Comparing Multi-Class Classification Models

Technical skills

Programming languages
Proficient in: Javascript, HTML, CSS
Familiar with: Python, C++, SQL

Software & Tools
FrontEnd: D3, Vue, Vuex, Pinia, React, Redux
Backend: FastAPI, Flask, MySQL, MongoDB
Others: Node, Git, Adobe Photoshop, Adobe Illustrator, Unity, Camtasia

Languages
English, Chinese

Honors and scholarships

2019   Chinese National Scholarship

2019   Second Prize of Artificial Intelligence Innovation (organized by Zhejiang University)

2016   Zhejiang Provincial Government Scholarship

2015   Third Prize of Zhejiang Provincial Undergraduate Physics Competition

Other interests

Swimming, Hiking, Photography