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Jiayi Hong

Personal Page



I am a postdoctoral research scholar at the Vader lab, supervised by Ross Maciejewski. Previously, I did my Ph.D. at AVIZ Inria, Université Paris Saclay, supervised by Tobias Isenberg. My Ph.D. research explores interactive visualization with machine learning for 3D datasets. My research interests lie in novel visual representations, visualizations for Artificial Intelligence, and human-computer interaction.

EDUCATION

Ph.D. in Computer Science, Visualization/HCI, Jan. 2020 — Feb. 2023

[Inria, Université Paris Saclay, France](#)

Thesis: Machine Learning Supported Interactive Visualization of Hybrid 3D and 2D Data for the Example of Plant Cell Lineage Specification

Advisor: Tobias Isenberg, *Co-advisor:* Alain Trubuil

Committee: Barbora Kozlíková, Miriah Meyer, Caroline Appert, Anastasia Bezerianos, and Johanna Beyer

Master of Science, Computer Science, Sept. 2018 — Nov. 2019

[University of Bristol, UK](#)

Thesis: Design Large Shape Changing Infrastructures

Thesis Advisor: Anne Roudaut

Grade: Distinction

Bachelor of Science, Industrial Design, Sept. 2014 — June 2018

[Zhejiang University, China](#)

GPA: 3.96/4.00

PUBLICATIONS

- [1] **Jiayi Hong**, Rostyslav Hnatyshyn, Ebrar A. D. Santos, Ross Maciejewski, and Tobias Isenberg. “A Survey of Designs for Combined 2D+3D Visual Representations”. In: *IEEE Transactions on Visualization and Computer Graphics* (2024). doi: 10.1109/TVCG.2024.3388516.
- [2] Rostyslav Hnatyshyn, **Jiayi Hong**, Ross Maciejewski, Christopher Norby, and Carlo C. Maley. “Capturing Cancer as Music: Cancer Mechanisms Expressed through Musification”. In: *Proceedings of the CHI Conference on Human Factors in Computing Systems* (2024). doi: 10.1145/3613904.3642153.
- [3] Yixuan Wang, Jieqiong Zhao, **Jiayi Hong**, Ronald G. Askin, and Ross Maciejewski. “A Simulation-based Approach for Quantifying the Impact of Interactive Label Correction for Machine Learning”. In: *IEEE Transactions on Visualization and Computer Graphics* (2024). doi: 10.1109/TVCG.2024.3468352.
- [4] **Jiayi Hong**, Sia Sheguri, Ronald G Askin, and Ross Maciejewski. “Carbon emission in football games: Footprint impact of power five conference realignment”. In: *Sustainability and Sports Science Journal* 2.2 (2024), pp. 98–106. doi: 10.61486/KDVT9069.
- [5] **Jiayi Hong**, Ross Maciejewski, Alain Trubuil, and Tobias Isenberg. “Visualizing and Comparing Machine Learning Predictions to Improve Human-AI Teaming on the Example of Cell Lineage”. In: *IEEE Transactions on Visualization and Computer Graphics* (2023). doi: 10.1109/TVCG.2023.3302308.
- [6] **Jiayi Hong**, Alain Trubuil, and Tobias Isenberg. “LineageD: An Interactive Visual System for Plant Cell Lineage Assignments based on Correctable Machine Learning”. In: *Computer Graphics Forum* 41.3 (June 2022), pp. 195–207. doi: 10.1111/cgf.14533.

- [7] **Jiayi Hong**, Xiyao Wang, Aluna Everitt, and Anne Roudaut. “Interacting with actuated walls: Exploring applications and input types”. In: *International Journal of Human-Computer Studies* 172 (2023), p. 102986. ISSN: 1071-5819. doi: <https://doi.org/10.1016/j.ijhcs.2022.102986>. URL: <https://www.sciencedirect.com/science/article/pii/S107158192200204X>.
- [8] **Jiayi Hong**, Ferran Argelaguet, Alain Trubuil, and Tobias Isenberg. “Design and Evaluation of Three Selection Techniques for Tightly Packed 3D Objects in Cell Lineage Specification in Botany”. In: *Proceedings of Graphics Interface (GI, May 27–28, virtually in Vancouver, BC, Canada)*. Mississauga, ON, Canada: Canadian Human-Computer Communications Society, 2021, pp. 213–223. ISBN: 978-0-9947868-6-9. doi: 10.20380/GI2021.33.
- [9] Ebrar A. D. Santos, **Jiayi Hong**, and Tobias Isenberg. “A Design Space for Linked 2D and 3D Visual Representations”. In: *Posters at the IEEE Conference on Visualization (IEEE VIS, October 16–21, Oklahoma City, USA)*. 2022.
- [10] Tan Tang, Junxiu Tang, **Jiayi Hong**, Lingyun Yu, Peiran Ren, and Yingcai Wu. “Design guidelines for augmenting short-form videos using animated data visualizations”. In: *Journal of Visualization* 23.4 (Aug. 2020), pp. 707–720. doi: 10.1007/s12650-020-00644-z.
- [11] **Jiayi Hong**, Ferran Argelaguet, Alain Trubuil, and Tobias Isenberg. “An Interactive System for Analyzing Plant Embryo Cell Division”. In: *Posters at the IEEE Conference on Visualization (IEEE VIS, October 25–30, virtually in) Salt Lake City, Utah*. 2020.

PRESENTATIONS

- 2024 Presented the paper “A Survey of Designs for Combined 2D+3D Visual Representations” [1] at **PacificVis 2024** in Tokyo, Japan, April 23-26, 2024.
- 2022 Presented the paper “LineageD: An Interactive Visual System for Plant Cell Lineage Assignments based on Correctable Machine Learning” [6] at **EuroVis 2022**, 24th EG Conference on Visualization, in Rome, Italy, June 13-17, 2022.
- 2021 Presented the paper “Design and Evaluation of Three Selection Techniques for Tightly Packed 3D Objects in Cell Lineage Specification in Botany” [8] at **Graphics Interface (GI) 2021**, sponsored by Canadian Human-Computer Communications Society. Held virtually, May 27-28 2021.
- 2020 Presented the poster “An Interactive System for Analyzing Plant Embryo Cell Division” [11] at **IEEE VIS 2020**, sponsored by the IEEE Computer Society and the Visualization and Graphics Technical Committee. Held virtually, October 23-28 2021.

ACTIVITIES

- Reviewing** TVCG: 2021, 2023
IEEE VIS: 2021
CHI: 2020, 2023
DIS: 2023
VRST: 2022
SIGGRAPH Asia (as Technical Communications and Posters Committee Member): 2022
- Teaching** **2021-2023 Introduction to Visualization**
- Tutorials and Grading
 - Graduate Level at CentralSupélec
- Supervision** **Ebrar Ada Santos**, Master's Student, Université Paris Saclay, co-supervised with Tobias Isenberg working on Exploring Interaction Design for Combining 2D Abstract Representations with 3D Representations, 2022

AWARDS AND HONORS

- 2020** **Best Project on the MSc in Computer Science** at University of Bristol
- 2018** **Outstanding Undergraduate Thesis Award** at Zhejiang University
- 2014-2016** **First-Class Scholarship for Outstanding Students** at Zhejiang University
- 2014-2016** **Excellent Student Award, Zhejiang University** at Zhejiang University
- 2016** **Chinese Patent: CN106056056**
about Airport Luggage Volume Measurement System Design Based on Realsense

PERSONAL SKILLS AND INTERESTS

- Personal Skills: Proficient in C, Java, JavaScript, Python; Skilled in R, Processing, Unity
- Interests: Dulcimer, Movies