Benjamin Choon Heng Lee | Curriculum Vitæ

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Research Interests

I am a Senior Associate Research Scientist as part of the Global Technology Applied Research AR/VR team at JPMorganChase. I conduct research in VR/AR to better understand how best to use the technology in the workplace. I have a particular interest in immersive analytics: which is the use of immersive and spatial computing technologies to enable data visualisation, analytics, and understanding.

Research Experience

JPMorganChase, New York, USA
June 2024 – Present

Senior Associate Research Scientist

- Research areas: Virtual and augmented reality, immersive analytics

University of Stuttgart, Stuttgart, Germany
Feb 2023 – Apr 2024

Postdoctoral Researcher

- Research areas: Immersive & situated analytics, human–computer interaction, hybrid user interfaces, data–driven storytelling

Microsoft Research, Redmond, Washington, USA
Jun 2019 – Sep 2019

Research Intern

- Research areas: Data–driven storytelling, virtual reality

Monash University, Melbourne, Australia
Feb 2019 – Jan 2023

Ph.D. in Immersive Analytics

- Research areas: Immersive Analytics

Education

Monash University, Melbourne, Australia
Feb 2019 – Jan 2023

Ph.D. in Immersive Analytics

- Thesis title: *Surfaces and Spaces in Immersive Analytics*
- Advisors: Prof. Tim Dwyer, A/Prof. Bernhard Jenny, Dr. Maxime Cordeil, Dr. Arnaud Prouzeau

Monash University, Melbourne, Australia
Feb 2015 – Nov 2018

Bachelor of Informatics and Computation Advanced (First Class Honours)

- Thesis title: *Heterogeneous Mixed-Reality Display Environments for Immersive Visual Analytics*
- Advisors: Prof. Tim Dwyer, A/Prof. Bernhard Jenny, Dr. Maxime Cordeil

Teaching

Teaching Associate

S2 2021 – S1 2022	FIT5147 Data Visualisation and Exploration (Head), Monash University
S1 2021	FIT5147 Data Visualisation and Exploration, Monash University
S2 2020	FIT3146 Maker Lab, Monash University
S1 2020	FIT5147 Data Visualisation and Exploration, Monash University

Guest Lectures

Fall 2024	*What is Immersive Analytics?,* New York University
Summer 2023	*Immersive and Situated Analytics*, University of Stuttgart

Supervision

PhD Students

Since 2023	Co-advisor of Carlos Quijano-Chavez. Topic: Situated visualisation.
Since 2023	Co-advisor of Nina Dörr. Topic: Visual highlighting in the real world.
Since 2023	Co-advisor of Xingyao Yu. Topic: Motion guidance in virtual reality.

Master's Students

2019	Co-advisor of Xiaoyun Hu. Thesis title: *Collaborative Data Visualisation in Virtual Reality.*

Bachelor's Students

2023 – 2024	Advisor of Vivien Schraitle. Topic: Cross-reality transition techniques.

Academic Service

Reviewing for Conferences (Full Papers)

2025	2 CHI, 1 VR
2024	3 CHI, 1 EuroVis, 1 MobileHCI, 1 ISMAR, 1 ISS, 1 SIGGRAPH, 1 VIS, 1 VR, 1 VRST (11 total)
2023	1 ISMAR, 1 ISS, 2 UIST, 5 VIS, 1 VR, 2 VRST (12 total)
2022	2 CHI, 1 ISMAR, 1 MobileHCI, 2 VIS, 5 VR (11 total)
2021	2 CHI, 1 EuroVis, 2 ISMAR, 1 ISS, 2 VIS (8 total)
2020	1 VIS (1 total)
2019	1 CHI (1 total)

Reviewing for Journals

2024	1 IJHCI, 2 TVCG
2023	3 Frontiers, 1 IJHCI, 1 JCSS, 3 TVCG (8 papers)

Reviewing for Conferences (Short Papers & Workshops)

2024	1 alt.CHI, 1 CHI LBW, 1 PacificVis VisNotes, 1 xrWORKS (4 total)
2023	5 HybridUI (5 total)

Organisation

2023	Co-organiser of HybridUI workshop @ ISMAR

Student Volunteering

2022	VR (online)
2020	OzCHI (online)

Conference and Journal Papers

- Xingyao Yu, David Rosin, Johannes Kässinger, <u>Benjamin Lee</u>, Frank Dürr, Christian Becker, Oliver Röhrle, and Michael Sedlmair. 2024. *PerSiVal: On-Body AR Visualization of Biomechanical Arm Simulations.* IEEE Computer Graphics and Applications. https://doi.org/10.1109/MCG.2024.3494598

- Xiaoyan Zhou*, <u>Benjamin Lee*</u>, Francisco R. Ortega, Anil Ufuk Batmaz, and Yalong Yang. 2024. *Lights, Headset, Tablet, Action: Exploring the Use of Hybrid User Interfaces for Immersive Situated Analytics*. Proceedings of the ACM on Human-Computer Interaction. https://doi.org/10.1145/3698147

- Nina Doerr, <u>Benjamin Lee</u>, Katarina Baricova, Dieter Schmalstieg, and Michael Sedlmair. 2024. *Visual Highlighting for Situated Brushing and Linking*. Computer Graphics Forum. https://doi.org/10.1111/cgf.15105

- Xingyao Yu, <u>Benjamin Lee</u>, and Michael Sedlmair. 2024. *Design Space of Visual Feedforward and Corrective Feedback in XR-Based Motion Guidance Systems*. In CHI Conference on Human Factors in Computing Systems. https://doi.org/10.1145/3613904.3642143

- <u>Benjamin Lee</u>, Michael Sedlmair, and Dieter Schmalstieg. 2023. *Design Patterns for Situated Visualization in Augmented Reality*. IEEE Transactions on Visualization and Computer Graphics. https://doi.org/10.1109/TVCG.2023.3327398.

- <u>Benjamin Lee</u>, Arvind Satyanarayan, Maxime Cordeil, Arnaud Prouzeau, Bernhard Jenny, and Tim Dwyer. 2023. *Deimos: A Grammar of Dynamic Embodied Immersive Visualisation Morphs and Transitions*. In CHI Conference on Human Factors in Computing Systems. https://doi.org/10.1145/3544548.3580754.

- <u>Benjamin Lee</u>, Maxime Cordeil, Arnaud Prouzeau, Bernhard Jenny, and Tim Dwyer. 2022. *A Design Space For Data Visualisation Transformations Between 2D And 3D In Mixed-Reality Environments*. In CHI Conference on Human Factors in Computing Systems. https://doi.org/10.1145/3491102.3501859. **[Honourable Mention Award]**

- Yang, Ying, Tim Dwyer, Michael Wybrow, <u>Benjamin Lee</u>, Maxime Cordeil, Mark Billinghurst, and Bruce H. Thomas. 2022. *Towards Immersive Collaborative Sensemaking*. Proceedings of the ACM on Human-Computer Interaction. https://doi.org/10.1145/3567741.

- Kadek Ananta Satriadi, Jim Smiley, Barrett Ens, Maxime Cordeil, Tobias Czauderna, <u>Benjamin Lee</u>, Ying Yang, Tim Dwyer, and Bernhard Jenny. 2022. *Tangible Globes for Data Visualisation in Augmented Reality*. In CHI Conference on Human Factors in Computing Systems. https://doi.org/10.1145/3491102.3517715.

- Jim Smiley, <u>Benjamin Lee</u>, Siddhant Tandon, Maxime Cordeil, Lonni Besançon, Jarrod Knibbe, Bernhard Jenny, and Tim Dwyer. 2021. *The MADE-Axis: A Modular Actuated Device to Embody the Axis of a Data Dimension*. Proceedings of the ACM on Human-Computer Interaction. https://doi.org/10.1145/3488546. **[Honourable Mention Award]**

- <u>Benjamin Lee</u>, Dave Brown, Bongshin Lee, Christophe Hurter, Steven Drucker, and Tim Dwyer. 2021. *Data Visceralization: Enabling Deeper Understanding of Data Using Virtual Reality*. IEEE Transactions on Visualization and Computer Graphics. https://doi.org/10.1109/TVCG.2020.3030435. **[Honourable Mention Award]**

- <u>Benjamin Lee</u>, Xiaoyun Hu, Maxime Cordeil, Arnaud Prouzeau, Bernhard Jenny, and Tim Dwyer. 2021. *Shared Surfaces and Spaces: Collaborative Data Visualisation in a Co-Located Immersive Environment*. IEEE Transactions on Visualization and Computer Graphics. https://doi.org/10.1109/TVCG.2020.3030450.

Short Papers (Demos, Extended Abstracts, Workshops, Tutorials)

- Ying Yang, Tim Dwyer, Zachari Swiecki, <u>Benjamin Lee</u>, Michael Wybrow, Maxime Cordeil, Teresa Wulandari, Bruce H. Thomas, Mark Billinghurst. 2024. *Putting Our Minds Together: Iterative Exploration for Collaborative Mind Mapping*. Accepted in Augmented Human Conference (Posters).

- Carlos Quijano-Chavez, Nina Doerr, <u>Benjamin Lee</u>, Dieter Schmalstieg, and Michael Sedlmair. 2024. *Brushing and Linking for Situated Analytics*. At Workshop on Seamless Reality, an IEEE VR Workshop.

- Xiaoyan Zhou, Yalong Yang, Francisco Ortega, Anil Ufuk Batmaz, and <u>Benjamin Lee</u>. 2023. *Data-driven Storytelling in Hybrid Immersive Display Environments*. 2023 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct), 242–246. https://doi.org/10.1109/ISMAR-Adjunct60411.2023.00056

- Anika Sayara, <u>Benjamin Lee</u>, Carlos Quijano-Chavez, and Michael Sedlmair. 2023. *Designing Situated Dashboards: Challenges and Opportunities*. 2023 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct), 97–102. https://doi.org/10.1109/ISMAR-Adjunct60411.2023.00028

- Ari Kouts, Lonni Besançon, Michael Sedlmair, and <u>Benjamin Lee</u>. 2023. *LSDvis: Hallucinatory Data Visualisations in Real World Environments*. At alt.VIS 2023, an IEEE VIS Workshop. https://doi.org/10.48550/arXiv.2312.11144

- Sebastian Hubenschmid, Johannes Zagermann, Raimund Dachselt, Niklas Elmqvist, Steven Feiner, Tiare Feuchtner, <u>Benjamin Lee</u>, Harald Reiterer, and Dieter Schmalstieg. 2023. *Hybrid User Interfaces: Complementary Interfaces for Mixed Reality Interaction*. In 22nd IEEE International

Symposium on Mixed and Augmented Reality (ISMAR 2023), 16 Oct 2023 – 20 Oct 2023, Sydney, Australia. https://doi.org/10.48787/kops/352-2-6b4c33kejaww2

- Nicholas Spyrison, Benjamin Lee, and Lonni Besançon. 2021. *"Is IEEE VIS *that* Good?" On Key Factors in the Initial Assessment of Manuscript and Venue Quality*. In alt.VIS 2021, an IEEE VIS Workshop. https://doi.org/10.31219/osf.io/65wm7.

- Benjamin Lee, Maxime Cordeil, Arnaud Prouzeau, and Tim Dwyer. 2019. *FIESTA: A Free Roaming Collaborative Immersive Analytics System*. In Proceedings of the 2019 ACM International Conference on Interactive Surfaces and Spaces, 335–38. Daejeon Republic of Korea: ACM. https://doi.org/10.1145/3343055.3360746.