

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

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| Summer 2023 | Virtual and Augmented Reality (Guest Lecture) |
| S2 2021 – S1 2022 | FIT5147 Data Visualisation and Exploration (Head TA) |
| S1 2021 | FIT5147 Data Visualisation and Exploration |
| S2 2020 | FIT3146 Maker Lab |
| S1 2020 | FIT5147 Data Visualisation and Exploration |

Supervision

PhD Students

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| 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

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| 2019 | Co-advisor of Xiaoyun Hu. Thesis title: <i>Collaborative Data Visualisation in Virtual Reality</i> . |
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Bachelor's Students

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

Reviewing for Conferences (Full Papers)

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| 2024 | 3 CHI, 1 EuroVis, 1 MobileHCI, 1 ISMAR, 1 ISS, 1 SIGGRAPH, 1 VIS, 1 VR, 1 VRST |
| 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

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

Reviewing for Conferences (Short Papers & Workshops)

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

Organisation

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| 2023 | Co-organiser of HybridUI workshop @ ISMAR |
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Student Volunteering

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| 2022 | VR (online) |
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Conference and Journal Papers

- Nina Doerr, Benjamin Lee, Katarina Baricova, Dieter Schmalstieg, and Michael Sedlmair. 2024. *Visual Highlighting for Situated Brushing and Linking*. Computer Graphics Forum. Odense, Denmark.
- Xingyao Yu, Benjamin Lee, 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, 1–15. Honolulu HI USA: ACM.
- Benjamin Lee, Michael Sedlmair, and Dieter Schmalstieg. 2023. *Design Patterns for Situated Visualization in Augmented Reality*. IEEE Transactions on Visualization and Computer Graphics, pp. 1–12. <https://doi.org/10.1109/TVCG.2023.3327398>.
- Benjamin Lee, 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, 1–18. Hamburg, Germany: ACM. <https://doi.org/10.1145/3544548.3580754>.
- Benjamin Lee, 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, 1–14. New Orleans LA USA: ACM. <https://doi.org/10.1145/3491102.3501859>. [Honourable Mention Award]
- Yang, Ying, Tim Dwyer, Michael Wybrow, Benjamin Lee, Maxime Cordeil, Mark Billingham, and Bruce H. Thomas. 2022. *Towards Immersive Collaborative Sensemaking*. Proceedings of the ACM on Human-Computer Interaction 6 (ISS): 722–46. <https://doi.org/10.1145/3567741>.
- Kadek Ananta Satriadi, Jim Smiley, Barrett Ens, Maxime Cordeil, Tobias Czauderna, Benjamin Lee, 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, 1–16. New Orleans LA USA: ACM. <https://doi.org/10.1145/3491102.3517715>.
- Jim Smiley, Benjamin Lee, 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 5 (ISS): 1–23. <https://doi.org/10.1145/3488546>. [Honourable Mention Award]
- Benjamin Lee, 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 27 (2): 1095–1105. <https://doi.org/10.1109/TVCG.2020.3030435>. [Honourable Mention Award]
- Benjamin Lee, 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 27 (2): 1171–81. <https://doi.org/10.1109/TVCG.2020.3030450>.

Short Papers (Demos, Extended Abstracts, Workshops)

- Ying Yang, Tim Dwyer, Zachari Swiecki, Benjamin Lee, Michael Wybrow, Maxime Cordeil, Teresa Wulandari, Bruce H. Thomas, Mark Billingham. 2024. *Putting Our Minds Together: Iterative Exploration for Collaborative Mind Mapping*. Accepted in Augmented Human Conference (Posters).
- Carlos Quijano-Chavez, Nina Doerr, Benjamin Lee, 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 Benjamin Lee. 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, Benjamin Lee, 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 Benjamin Lee. 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 Dachsel, Niklas Elmqvist, Steven Feiner, Tiare Feuchtner, Benjamin Lee, 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 Spyrisson, 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>.