

Giorgio Colombo, PhD

Postdoctoral Researcher · Digital Health Scientist · UX & Product Lead

colombo.giorgio1293@gmail.com · Singapore · Italian · English · French

MIND demo · SPACE · PhD thesis · Website · LinkedIn · Google Scholar

3,500+
participants tested across clinical and community cohorts

14
peer-reviewed publications, incl. Communications Medicine and Scientific Reports

6
first or equal-first-author papers

3 postdocs + 1 PhD
in the Singapore MIND team I lead, plus RAs and interns

Postdoctoral researcher at the Singapore–ETH Centre (Future Health Technologies 2) with a PhD in Health Risk and Prevention from ETH Zurich. I lead the **MIND** project in Singapore, an AI-enabled platform for monitoring cognitive health in daily life, and its multi-institution research team. My expertise spans digital biomarkers, human-centred design, LLM-supported digital health tools and multimodal clinical validation. I translate clinical and user needs into scalable digital health products through research, hands-on product development and stakeholder collaboration.

WORK EXPERIENCE

2026 – Present

Postdoctoral Researcher — lead researcher in Singapore, MIND

Singapore–ETH Centre, Future Health Technologies 2 (FHT2), Singapore

Lead the MIND project in Singapore within a large-scale programme on AI-enabled monitoring and support of cognitive and mental health, working with PI Assoc. Prof. Victor R. Schinazi (Bond University).

- **Team leadership** · Manage and coordinate a multi-institution team of 3 postdoctoral researchers (NUS, NTU), 1 PhD student, research assistants and interns: planning, task allocation, mentoring and progress reviews.
- **MIND app & dashboard** · Designed and developed the MIND app and its research dashboard: a conversational, LLM-supported companion combining passive sensing, real-world navigation tasks and questionnaires, with a secure web platform for participant management, monitoring and data export.
- **Digital markers** · Develop AI-enabled digital markers for cognitive health monitoring.
- **Collaborations** · Coordinate multi-site, multidisciplinary collaborations across clinicians, engineers and AI researchers.
- **Dissemination** · Contribute to scientific publications, stakeholder engagement and programme development.

MIND: App teaser · Research dashboard · Overview slides

2026 – Present

Co-founder & Product Lead

thēma, Brescia, Italy · thema-app.com

Co-founded an AI-enabled platform for psychologists and psychotherapists: agenda, clinical records, session notes and invoicing in one place, with AI session summaries and agents (Incarica thēma) that carry out requests written in plain words, always as a preview the clinician confirms. Privacy by design, GDPR-compliant, data hosted in the EU.

- **Strategy** · Define product vision, roadmap and feature prioritisation.
- **UX research** · Lead UX and design research with mental health professionals.
- **Delivery** · Designed and built the platform, from the first prototype to the live product, including the AI layer.
- **Governance** · Develop privacy and AI-governance practices for sensitive health data.

2026

UX Research Consultant

ReportAId, Milan, Italy

Collaborated with an AI-enabled digital health start-up developing automated clinical reporting for healthcare professionals.

- **User research** · Conducted user research and usability evaluation of AI-enabled clinical reporting tools.
- **Workflow** · Identified usability barriers and opportunities for workflow optimisation.
- **Recommendations** · Provided evidence-based recommendations for product improvement.

2025 – 2026

Research Consultant

ETH Zurich, Switzerland · Bond University, Gold Coast, Australia

Supported digital health research on ageing and the early detection of health risks, including the early UX research that shaped MIND.

- **Programme planning** · Facilitated collaboration between researchers, clinicians and engineers in planning a large-scale programme (Future Health Technologies 2).
- **Visiting scholar** · Two months at Bond University, funded by an ETH Zurich grant I secured, to consolidate ongoing projects and ensure a seamless transition into FHT2.
- **Grants & reports** · Contributed to research reports, grant proposal planning and writing, and peer-reviewed publications.

2020 – 2025

PhD Researcher

ETH Zurich, Chair of Cognitive Science, Switzerland · Singapore–ETH Centre, Future Health Technologies, Singapore

Led the development and clinical validation of SPACE, an iPad-based serious game that detects early cognitive impairment through spatial navigation, from concept to translational maturity.

- **Game design** · Translated cognitive-neuroscience tasks into game mechanics with an external game developer: mock-ups, prototypes and iterative testing.
- **Usability** · Led usability testing, from focus groups with older adults to community testing with 400+ participants.
- **Clinical validation** · Coordinated multi-site testing of healthy and clinical cohorts (N > 3,500) with NUS, Duke-NUS, the National University Hospital and the Singapore National Eye Centre, including n > 1,000 participants assessed with SPACE alongside behavioural measures, structural MRI and blood and saliva biomarkers.
- **Key findings** · Showed that SPACE discriminates between levels of cognitive impairment, predicts hippocampal atrophy beyond standard neuropsychological assessments and captures variation in Alzheimer's-related pathology (*Communications Medicine*, *Scientific Reports*).
- **Lab management** · Oversaw day-to-day operations of the Singapore lab and twice took over a postdoctoral researcher's responsibilities during maternity leave.
- **Grants** · Co-wrote two successfully funded grant proposals with the PI (IntraCREATE; FHT2).
- **Statistics** · Advanced statistical analysis of multimodal datasets and data visualisation (R, SPSS, Jamovi).
- **Dissemination** · Presented at international conferences, including ACM CHI (Hamburg), RehabWeek (Singapore) and the Psychonomic Society (New York).

SPACE: SPACE materials · PhD thesis

2019 – 2020

Researcher

Bournemouth University, Ageing & Dementia Research Centre, UK

Supported research on spatial cognition and navigation.

- **VR studies** · Coordinated experimental design and data collection for VR studies.
- **Analysis** · Performed statistical analyses and data visualisation (R, SPSS, Jamovi), and disseminated results in scientific publications.

2018 – 2019

Researcher · T-Labs, Quality & Usability Lab, TU Berlin, Germany
Usability testing of a digital cognitive training app for older adults.

2018 – 2019

Researcher · Memory & Learning Lab, University of Padova, Italy
Designed and ran behavioural experiments on environmental influences on cognitive performance.

EDUCATION

2020 – 2025 **PhD, Health Risk and Prevention** · ETH Zurich, Chair of Cognitive Science, Zurich · Singapore–ETH Centre, Future Health Technologies, Singapore

2015 – 2018 **MSc, Psychology** · University of Padova, Italy

2013 – 2014 **Erasmus+, Psychology** · Paris Diderot University – Paris 7, France

2012 – 2015 **BSc, Cognitive and Psychobiological Sciences** · University of Padova, Italy

SELECTED PUBLICATIONS

* equal contribution · full list on Google Scholar

1 **Colombo, G.**, Minta, K., Taylor, W. R., Grübel, J., Chong, E., Chong, J. R., Lim, M., Gonzales, P., Lai, M., Chen, C., & Schinazi, V. R. (2026). **Spatial navigation as a digital marker for clinically differentiating cognitive impairment severity**. *Communications Medicine, 6*, 228. doi:10.1038/s43856-026-01484-y · *Nature Portfolio Dementia collection*

2 **Colombo, G.**, Minta, K., Thrash, T., Grübel, J., Wiener, J., Avraamides, M., Taylor, W. R., Hölscher, C., & Schinazi, V. R. (2026). **Beyond traditional assessments of cognitive status: Exploring the potential of spatial navigation tasks**. *Behavior Research Methods, 58*, 126. doi:10.3758/s13428-026-02998-y

3 Minta, K.*, **Colombo, G.***, Tee, M.*, Low, M., Grübel, J., Wiener, J., Chen, C., Hilal, S., & Schinazi, V. R. (2026). **SPACE: A novel digital tool for assessing hippocampal structural integrity in older adults**. *Scientific Reports, 16*, 8587. doi:10.1038/s41598-026-39628-8

4 Tian, N., **Colombo, G.**, & Schinazi, V. R. (2026). **From play to detection: Mini-SPACE as a serious game for unsupervised cognitive impairment screening**. *International Journal of Human–Computer Interaction*, 1–31. doi:10.1080/10447318.2026.2674833

5 Schinazi, V. R.*, **Colombo, G.***, & Minta, K. (2026). **Designing effective clinical tools for measuring navigation deficits associated with cognitive impairment: Insights from human–computer interaction research**. In *Challenges in Navigation Research: Mapping New Directions* (Strüngmann Forum Reports, pp. 399–429). Springer Nature. doi:10.1007/978-3-032-20563-6_15

6 Chan, A., Visaria, A., Malhotra, R., … **Colombo, G.**, Minta, K., Lamoureux, E. L., & Taylor, W. R. (2026). **Rationale, design, and baseline characteristics of the TARGET cohort of older adults for assessing fall and fracture risk: Prospective cohort study**. *JMIR Aging, 9*, e89285. doi:10.2196/89285

7 Ng, C. A., Lim, M. J. H., Chong, E. J. Y., **Colombo, G.**, Schinazi, V. R., Venketasubramanian, N., & Chen, C. L.-H. (2026). **A comparison of the Quick Dementia Rating System and Montreal Cognitive Assessment for detecting mild cognitive impairment and dementia assessed by the Clinical Dementia Rating Scale**. *Journal of Alzheimer's Disease, 113*(1), 186–197. doi:10.1177/13872877261467344

8 Tee, M., Padrela, B., Dupeyron, M., Huang, J., Low, M., … Minta, K., Schinazi, V. R., **Colombo, G.**, Petr, J., Mutsaerts, H., & Hilal, S. (2025). **Associations between potential risk factors and blood–brain barrier water permeability in middle-aged and older adults**. *Journal of Alzheimer's Disease, 104*(1), 95–105. doi:10.1177/13872877251314138

9 **Colombo, G.** (2025). *A blueprint for digital tools in early detection of cognitive impairment: The development and validation of the Spatial Performance Assessment for Cognitive Evaluation (SPACE)*. Doctoral dissertation, ETH Zurich. Thesis

10 **Colombo, G.**, Minta, K., Grübel, J., Tai, E. W. L., Hölscher, C., & Schinazi, V. R. (2024). **Detecting cognitive impairment through an age-friendly serious game: The development and usability of the Spatial Performance Assessment for Cognitive Evaluation (SPACE)**. *Computers in Human Behavior, 160*, 108349. doi:10.1016/j.chb.2024.108349

11 Minta, K., **Colombo, G.**, Taylor, W. R., & Schinazi, V. R. (2023). **Differences in fall-related characteristics across cognitive disorders**. *Frontiers in Aging Neuroscience, 15*, 1171306. doi:10.3389/fnagi.2023.1171306

12 **Colombo, G.**, & Grübel, J. (2023). **The Spatial Performance Assessment for Cognitive Evaluation (SPACE): A novel game for the early detection of cognitive impairment**. In *Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems* (pp. 1–6). ACM. doi:10.1145/3544549.3583828

13 Segen, V., **Colombo, G.**, Avraamides, M., Slattery, T., & Wiener, J. M. (2022). **The role of memory and perspective shifts in systematic biases during object location estimation**. *Attention, Perception, & Psychophysics, 84*(4), 1208–1219. doi:10.3758/s13414-022-02445-y

14 Segen, V., Avraamides, M., Slattery, T., **Colombo, G.**, & Wiener, J. M. (2021). **Comparable performance on a spatial memory task in data collected in the lab and online**. *PLOS ONE, 16*(11), e0259367. doi:10.1371/journal.pone.0259367

15 Segen, V., **Colombo, G.**, Avraamides, M., Slattery, T., & Wiener, J. M. (2021). **Perspective taking and systematic biases in object location memory**. *Attention, Perception, & Psychophysics, 83*(5), 2033–2051. doi:10.3758/s13414-021-02243-y

16 *Preprint.* McKeown, D., Cruzado, O., **Colombo, G.**, Angus, D., & Schinazi, V. R. (2026). **Perceived vs. actual navigation ability: Differences between autistic and typically developing children**. *medRxiv*. doi:10.64898/2026.04.09.26350542

SELECTED CONFERENCES

2024	**65th Annual Meeting of the Psychonomic Society** · New York, USA · Poster
2023	**RehabWeek 2023** · Singapore · Demonstration of SPACE
2023	**ACM CHI Conference on Human Factors in Computing Systems** · Hamburg, Germany · Presentation
2022	**4th Interdisciplinary Navigation Symposium (iNAV 2022)** · Talk: SPACE, a novel tablet-based tool to detect cognitive impairment

GRANTS

2026 – 2031 **Future Health Technologies 2** · Blended Monitoring and Interventions for Cognitive and Mental Health. National Research Foundation, Singapore. S$ 4.5M (module), S$ 30M (total).
Role: contributor to module conceptualisation; lead researcher for MIND in Singapore.

2022 – 2024 **IntraCREATE Seed Collaboration Grant** · SPACE: A cognitive training tool to protect against age-related decline. National Research Foundation, Singapore. S$ 250,000.
Role: Co-Investigator. Outcomes: SPACE validated against neuroimaging markers; a six-month SPACE training intervention improved navigation in older adults.

MENTORING & AWARDS

2018 – 2025 **Supervision** · Master's thesis projects, undergraduate students, research assistants and interns at ETH Zurich, the Singapore–ETH Centre and the University of Padova.

2025 **ETH Medal nomination** · Nominated for the ETH Zurich Medal for outstanding doctoral theses.

2023 **CHI23 Student Game Competition finalist** · ACM CHI 2023, Hamburg: novel game-based approaches to health and behaviour change.

STAKEHOLDER & POLICY ENGAGEMENT

Governmental and public authorities
Presented research outcomes to national research agencies and public authorities (e.g., Swiss SERI; National Research Foundation Singapore; health authorities).

Scientific advisory boards & expert panels
Presented and discussed findings with advisory boards and expert committees supporting evidence-based decision-making.

Policy and institutional stakeholders
Engaged with public-sector delegations and institutional leaders at international research, health and innovation events.

Industry and innovation stakeholders
Knowledge exchange and demonstrations with industry partners and innovation organisations (e.g., Zühlke; Confindustria).

Public engagement and outreach
Dissemination and educational activities for non-expert audiences (e.g., Science Centre Singapore; STEM Teachers' Festival).

Editorial and peer review
Ad hoc reviewer: Journal of Environmental Psychology; Journal of Alzheimer's Disease Reports; MIT Press.

COMPETENCES & SKILLS

Competences	Digital biomarkers & clinical validation · Human-centred design · AI-enabled health platforms · Research leadership · Clinical digital innovation
Methods	Experimental design · Clinical validation studies · Usability studies & focus groups · Multimodal data integration (behaviour, MRI, fluid biomarkers, wearables) · Regression, factor & ROC analysis · Data visualisation
Tools	R · SPSS · Jamovi · Mobile & web app prototyping · LLM integration

REFERENCES

reference letters available on request

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