Armand Kapaj

Spatial Cognition Researcher

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Experience

01.2024 – Present **Senior Scientist.** Geographic Information Visualization and Analysis (GIVA) research group, Department of Geography, University of Zurich, Zurich, Switzerland.

08.2023 – 12.2023 **Postdoctoral Researcher.** GIVA research group, Department of Geography, University of Zurich, Zurich, Switzerland.

05.2023 – 07.2023 **Research Assistant.** GIVA research group, Department of Geography, University of Zurich, Zurich, Switzerland.

02.2019 – 04.2023 **Ph.D. Student Researcher.** GIVA research group, Department of Geography, University of Zurich, Zurich, Switzerland.

Education

02.2009 – 04.2013 **Ph.D. in Geography,** Department of Geography, University of Zurich, Zurich, Switzerland. *Thesis*: *Landmark Visualization on Mobile Maps – Effects on Visual Attention, Spatial Learning, and Cognitive Load during Map-Aided Real-World Navigation of Pedestrians.*

10.2016 – 09.2018 **Erasmus Mundus M.Sc. in Cartography,** hosted by the Technical University of Munich, Vienna University of Technology, Dresden University of Technology, and the University of Twente. *Thesis*: *User-Oriented Campus Routing.*

10.2011 – 10.2013 **M.Sc. in Geography,** University of Tirana, Tirana, Albania.

10.2007 – 04.2011 **B.Sc. in Geography,** University of Tirana, Tirana, Albania.

Publications

Hilton, C., **Kapaj**, **A.**, & Fabrikant, S. I. (2025). Fixation-related potentials during mobile map assisted navigation in the real world: The effect of landmark visualization style. *Attention, Perception, & Psychophysics*, *87*, 191–206. https://doi.org/10.3758/s13414-024-02864-z

Hilton, C., **Kapaj**, **A.**, & Fabrikant, S. I. (2024). Realistic landmark symbols on a map provide implicit, but not explicit, benefits during spatial navigation. *In: Abstracts and authors of the 9th International Conference on Spatial Cognition: Segmentation and Binding in Spatial Cognition (ICSC 2024)*, *Cognitive Processing 25*(Suppl 1), 37–38. https://doi.org/10.1007/s10339-024-01218-9

Kapaj, **A.**, Hilton, C., & Fabrikant, S. I. (2024a). Long-term retention of landmark and route knowledge acquired during a real-world map-aided navigation task. *In: Abstracts and authors of the 9th International Conference on Spatial Cognition: Segmentation and Binding in Spatial Cognition (ICSC 2024)*, *Cognitive Processing 25*(Suppl 1), 37. https://doi.org/10.1007/s10339-024-01218-9

Kapaj, **A.**, Hilton, C., Lanini-Maggi, S., & Fabrikant, S. I. (2024). The influence of landmark visualization style on task performance, visual attention, and spatial learning in a real-world navigation task. *Spatial Cognition & Computation*, *24*(4), 227–267. https://doi.org/10.1080/13875868.2024.2328099

Kapaj, **A.**, Hilton, C., & Fabrikant, S. I. (2024b). Long-Term Landmark and Route Memory Retention Acquired in a Real-World Map-Aided Navigation Task (Short Paper). In B. Adams, A. L. Griffin, S. Scheider, & G. McKenzie (Eds.), *16th international conference on spatial information theory (COSIT 2024)* (13:1–13:9, Vol. 315). Schloss Dagstuhl – Leibniz-Zentrum für Informatik. https://doi.org/10.4230/LIPIcs.COSIT.2024.13

Hilton, C., **Kapaj**, **A.**, & Fabrikant, S. I. (2023). Landmark Sequence Learning from Real-World Route Navigation and the Impact of Navigation Aid Visualisation Style. *Journal of Cognition*, *6*(1), 41. https://doi.org/10.5334/joc.307

Kapaj, **A.** (2023). *Landmark Visualization on Mobile Maps – Effects on Visual Attention, Spatial Learning, and Cognitive Load during Map-Aided Real-World Navigation of Pedestrians* [Dissertation]. University of Zurich. https://doi.org/10.5167/uzh-234860

Kapaj, **A.**, Hilton, C., Lanini-Maggi, S., & Fabrikant, S. I. (2023). The influence of landmark visualization style on task performance, visual attention, and spatial learning in a real-world navigation task [Publisher: PsyArXiv Preprints]. https://doi.org/10.31234/osf.io/abfp7

Kapaj, **A.**, Lanini-Maggi, S., Hilton, C., Cheng, B., & Fabrikant, S. I. (2023). How does the design of landmarks on a mobile map influence wayfinding experts' spatial learning during a real-world navigation task? *Cartography and Geographic Information Science*, *50*(2), 197–213. https://doi.org/10.1080/15230406.2023.2183525

Kapaj, **A.**, Lin, E., & Lanini-Maggi, S. (2022). The Effect of Abstract vs. Realistic 3D Visualization on Landmark and Route Knowledge Acquisition (Short Paper). In T. Ishikawa, S. I. Fabrikant, & S. Winter (Eds.), *15th international conference on spatial information theory (COSIT 2022)* (15:1–15:8, Vol. 240). Schloss Dagstuhl – Leibniz-Zentrum für Informatik. https://doi.org/10.4230/LIPIcs.COSIT.2022.15

Kapaj, **A.**, Lanini-Maggi, S., & Fabrikant, S. I. (2021a). The impact of landmark visualization style on expert wayfinders' cognitive load during navigation. *Abstracts of the ICA*, *3*, 1–3. https://doi.org/10.5194/ica-abs-3-138-2021

Kapaj, **A.**, Lanini-Maggi, S., & Fabrikant, S. I. (2021b). The influence of landmark visualization style on expert wayfinders' visual attention during a real-world navigation task. *GIScience 2021 Short Paper Proceedings*. https://doi.org/10.25436/E2NP44

Wilkening, J., **Kapaj**, **A.**, & Cron, J. (2019). Creating a 3D Campus Routing Information System with ArcGIS Indoors. *Publications of the DGPF*, *28*.

Kapaj, **A.** (2018). *User-Oriented Campus Routing* [Master's thesis, Technical University of Munich]. https://mediatum.ub.tum.de/1619880

Invited talks

07.2023 **The interaction between landmark visualization style, spatial abilities, and visual attention on wayfinders' spatial learning during real-world map-aided navigation.** *Chair of Biological Psychology and Neuroergonomics, Institute of Psychology and Ergonomics, Technical University of Berlin.*

Professional activities

Workshops

September 2024 — **Co-organizer** of the **Thematic Session** *Conducting Empirical Research across Spatial Cognition and GIScience: Progress and Outlook* at the 16th International Conference on Spatial Information Theory (COSIT 2024), held in Quebec, Canada.

Memberships

2023 – 2027 — **Vice Chair** of the International Cartographic Association (ICA) *Commission on Ubiquitous Mapping.*

Since 2023 — **Member** of the *DSI Mobility Community* of the Digital Society Initiative (DSI) at the University of Zurich.

Research visits

June 2019 — **Research visit** at the *Institute of Cognitive Psychology* at Leiden University, Netherlands.

Services

Reviewing — Spatial Cognition & Computation, Cartography and Geographic Information Science, Geocarto International, Spatial Science, International Journal of Geographic Information Science, Information Visualization, Virtual Reality, Journal of Cognitive Psychology, and Scientific Committee member of the 32nd International Cartographic Conference (ICC 2025).

Awards

2022 — **Best Short Paper Award** at the *15th International Conference on Spatial Information Theory (COSIT 2022)*, Kobe, Japan for the paper *The Effect of Abstract vs. Realistic 3D Visualization on Landmark and Route Knowledge Acquisition (Short Paper).*

2016 – 2018 — **Erasmus Mundus Joint Masters Scholarship** awarded by the *European Commission* to attend the *International Erasmus Mundus Master of Science in Cartography* hosted by the Technical University of Munich, Vienna University of Technology, Dresden University of Technology, and the University of Twente.

2013 — **Gold Medal Award for Academic Excellence**, conferred by the University of Tirana, Albania, *in recognition of outstanding academic achievement (average grade 10/10)* in the Master of Science in Geography.

2012 — **Tuition Waiver Scholarship**, awarded by the University of Tirana, Albania, *in recognition of achieving a perfect average grade (10/10)* during the first year of the Master of Science in Geography. Provided full tuition coverage for the second year of study.

Skills

Coding — R, R Shiny, Matlab, SQL, XML/XSL, KML, HTML, CSS, JavaScript, Java.

GIS Software — ESRI Suite (ArcGIS Desktop, ArcGIS Pro, ArcGIS Indoors, CityEngine, ArcGIS Online, ArcGIS Survey123), QGIS, Mapbox, ILWIS, Grass GIS, PostGIS.

Languages — **Albanian** (native speaker); **English** (working proficiency); **German** (limited).