Jakub Krukar, PhD

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PROFILE

02.2015—	**Post-Doctoral Researcher** *Institute for Geoinformatics, University of Münster, Germany.* Main project: "WayTO: Wayfinding Through Orientation" ERC Starting Grant awarded to Prof. Angela Schwering (ERC No. 637645).
09-10.2020	**Statistics and Methodology Consultant** *Chair of Cognitive Science, ETH Zurich.*
08-09.2019	**Visiting Research Fellow** *Future Cities Laboratory, Singapore-ETH Centre, Singapore.* Invited by Prof. Hölscher's Cognition, Perception and Urban Behaviour Group.
9.2018-3.2019	**Parental leave**. *Institute for Geoinformatics, University of Münster.*
10.2016- 03.2017	**Research Associate** *Institute for Geoinformatics, University of Münster, Germany.* Substitution of Prof. Angela Schwering as the Head of Spatial Intelligence Lab (tasks incl. principal supervision of PhD/MSc students and project management).
25.11.2015	**PhD** (*viva voce* on 19.06.2015) *Department of Architecture and Built Environment, Northumbria University, Newcastle, United Kingdom.* "The Influence of an Art Gallery's Spatial Layout on Human Attention to and Memory of Art Exhibits." Principal Supervisor: Prof. Ruth Conroy Dalton (Architecture). Second Supervisor: Prof. Chris Dorsett (Fine Arts).
6.9.2011	**MA degree** in Psychology *University of Social Sciences and Humanities, Warsaw.* "Cross-Cultural Differences in Cognitive Representations of the Hagia Sophia Building in Istanbul." Supervisor: Andrzej Strzałecki (Psychology).
2007–2008	Volunteer Research Assistant. *Institute of Psychology, University of Social Sciences and Humanities, Warsaw, Poland.*

10-12.2010	Erasmus-Sponsored Intern. *E-Medya Consultancy, Istanbul, Turkey.*
1-7.2010	Erasmus Exchange Student. *Maltepe Universitesi, Istanbul, Turkey.*
12.2009	Intern. *UseLab Website Usability Research Company, Warsaw, Poland*
2003-2006	Marie Sklodowska-Curie High School. *Gorzów Wielkopolski, Poland.*

FUNDING AND AWARDS

As Postdoctoral Researcher

Grants Received

Swiss National Science Foundation (SNF) programme "Sinergia – interdisciplinary, collaborative and breakthrough"
Co-author and collaborator on a 4-year-long, €1.1M proposal accepted on 26.05.2021. Conceptualization and writing of 2 out of 8 work packages; share in the budget approx. 25%. Partners involved: ETH Zürich, Future Cities Lab Singapore, Institute for Geoinformatics at University of Münster. Acceptance rate: 21%.

Future Cities Visting Research Fellow grant. *Future Cities Laboratory, Singapore-ETH Centre, Singapore.*
Travel and accommondation grant to cover a 2-month long invited stay at the Future Cities Laboratory in Singapore.

Early-stage research bursary. *AGILE: Association of Geographic Information Laboratories in Europe.*
A €1200 early-stage research bursary towards the cost of purchasing a mobile eye-tracker in order to gather preliminary data for own research proposal.

Conference travel grant.. *DAAD: German Academic Exchange Service.*
A €1100 grant for participating in the course on Bayesian Modeling for the Cognitive Science (http://www.bayescourse.socsci.uva.nl).

Conference travel grant. *VolkswagenStiftung.*
Travel and accomodation grant to attend and present at the symposium "Interdisciplinarity Revisited" (grant renounced).

External Award Nominations

Heinz Maier-Leibnitz-Preis. *DFG: German Research Foundation*
University of Münster's nominee for the Heinz Maier-Leibnitz-Preis in 2019. Each German university can nominate up to 2 untenured researchers per year, recognising their 'outstanding research achievements'.

As PhD Student

Awards	**Fee waiver and maintenence grant** Received a 100% tuition fee waiver and a 3-year maintenance grant towards pursuing the doctoral degree. *Northumbria University, Newcastle, UK.*
Individual Travel Grants	Secured **over £4700** of travel funding from organisations: *Experimental Psychology Society (Grindley Grant), Spatial Cognition Research Center SFB/TR 8, MOVE (COST Action IC0903), COSIT2013, University of California Santa Barbara, ETH Zürich, Northumbria University Graduate School (x3).*
Public Engagement	Secured **over £900** towards the costs of attending and co-organising public engagement activities (see section on Public Engagement).
Conference Volunteering	Volunteered as staff at MuseumNext2012 and GIScience2014 conferences in exchange for a fee waiver.

As MA Student

Awards	Scholarships for excellent admission scores (year 1) and high GPA (year 2); Erasmus Exchange (year 3) and Erasmus Internship (year 4) scholarships; Student conference attendance scholarship (year 5).

RESEARCH

Publications

Open Science statement. My most recent first-author publications include an accompaning Open Science Framework (OSF) repository. If you are interested in the material from any older project, contact me and I commit to uploading data and runnable code within 2 weeks.

journals

Galvao, M., **Krukar, J.**, & Schwering, A. (2021). Evaluating Schematic Route Maps in Wayfinding Tasks for In-Car Navigation. *Cartography and Geographic Information Science*. doi: 10.1080/15230406.2021.1943531

Li, H., Mavros, P., **Krukar, J.**, & Hölscher, C. (2021). The effect of navigation method and visual display on distance perception and cognition in a large-scale virtual building. *Cognitive Processing*. doi: 10.1007/s10339-020-01011-4

Krukar, J., Manivannan, C., Bhatt, M., & Schultz, C. (2020). Embodied 3D Isovists: A Method to model the visual perception of space. *Environment and Planning B: Urban Analytics and City Science*. doi: 10.1177/2399808320974533

Krukar, J., Anacta, V. J., & Schwering, A. (2020). The effect of orientation instructions on the recall and reuse of route and survey elements in wayfinding descriptions. *Journal of Environmental Psychology*, 68, 101407. doi: 10.1016/j.jenvp.2020.101407

Krukar, J., & Dalton, R. C. (2020). How the Visitors' Cognitive Engagement Is Driven (but Not Dictated) by the Visibility and Co-visibility of Art Exhibits. *Frontiers in Psychology*, 11. doi: 10.3389/fpsyg.2020.00350

Galvao, M., **Krukar, J.**, Nöllenburg, M., & Schwering, A. (2020). Route schematization with landmarks. *Journal of Spatial Information Science*, 21. doi: 10.5311/JOSIS.2020.21.589

Löwen, H., **Krukar, J.**, & Schwering, A. (2019). Spatial Learning with Orientation Maps: The Influence of Different Environmental Features on Spatial Knowledge Acquisition. *ISPRS International Journal of Geo-Information*, 8(3), 149. doi: 10.3390/ijgi8030149

von Stülpnagel, R., & **Krukar, J.** (2018). Risk perception during urban cycling: An assessment of crowdsourced and authoritative data. *Accident Analysis & Prevention*, 121(May), 109–117. doi: 10.1016/j.aap.2018.09.009

Ranasinghe, C., **Krukar, J.**, & Kray, C. (2018). Visualizing Location Uncertainty on Mobile Devices. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 2(1), 1–22. doi: 10.1145/3191762

Schwering, A., **Krukar, J.**, Li, R., Anacta, V. J., & Fuest, S. (2017). Wayfinding Through Orientation. *Spatial Cognition & Computation*, 17(4), 273–303. doi: 10.1080/13875868.2017.1322597
most-read paper in journal's history (according to its website)

Krukar, J., Hölscher, C., & Conroy Dalton, R. (2017). Indoor Wayfinding: Interview with Christoph Hölscher and Ruth Conroy Dalton. *German Journal of Artificial Intelligence (Künstliche Intelligenz)*, 31(2), 185–191. doi: 10.1007/s13218-016-0483-3
(not peer-reviewed)

Krukar, J., Schwering, A., & Anacta, V. J. (2017). Landmark-Based Navigation in Cognitive Systems. *German Journal of Artificial Intelligence (Künstliche Intelligenz)*, 31(2), 121–124. doi: 10.1007/s13218-017-0487-7
editorial to a special issue (not peer-reviewed)

Krukar, J. (2014). Walk, look, remember: The influence of the gallery's spatial layout on human memory for an art exhibition. *Behavioral Sciences*, 4(3), 181–201. doi: 10.3390/bs4030181

book chapters

Dalton, R. C., **Krukar, J.**, & Hölscher, C. (2018). Architectural cognition and behavior. In D. R. Montello (Ed.), *Handbook of Behavioral and Cognitive Geography* (pp. 337–356). doi: 10.4337/9781784717544.00030

Krukar, J., Dalton, R. C., & Hölscher, C. (2016). Applying HCI Methods and Concepts to Architectural Design (Or Why Architects Could Use HCI Even If They Don't Know It). In S. N. Dalton, H. Schnädelbach, M. Wiberg, & T. Varoudis (Eds.), *Architecture and Interaction: Human Computer Interaction in Space and Place* (pp. 17–35). doi: 10.1007/978-3-319-30028-3_2

peer-reviewed conference proceedings

Löwen, H., **Krukar, J.**, & Schwering, A. (2019). Functional Scales in Assisted Wayfinding. In S. Timpf, C. Schlieder, M. Kattenbeck, B. Ludwig, & K. Stewart (Eds.), *Proceedings of the 14th International Conference on Spatial Information Theory (COSIT 2019)* (Vol. 142, pp. 3:1-3:7). doi: 10.4230/LIPIcs.COSIT.2019.3

Krukar, J., & Van Eek, A. (2019). The Impact of Indoor/Outdoor Context on Smartphone Interaction During Walking. In P. Kyriakidis, D. Hadjimitsis, D. Skarlatos, & A. Mansourian (Eds.), *Accepted Short Papers and Posters from the 22nd AGILE Conference on Geo-information Science.* Limassol, Cyprus: Stichting AGILE.

Krukar, J., Münzer, S., Lörch, L., Anacta, V. J., Fuest, S., & Schwering, A. (2018). Distinguishing Sketch Map Types: A Flexible Feature-Based Classification. In S. Creem-Regehr, J. Schöning, & A. Klippel (Eds.), *Spatial Cognition XI* (pp. 279–292). doi: 10.1007/978-3-319-96385-3_19

Krukar, J., Schwering, A., Löwen, H., Galvao, M., & Anacta, V. J. (2018). Rethinking Wayfinding Support Systems—Introduction. In P. Fogliaroni, A. Ballatore, & E. Clementini (Eds.), *Proceedings of Workshops and Posters at the 13th International Conference on Spatial Information Theory (COSIT 2017)* (pp. 151–152). doi: 10.1007/978-3-319-63946-8_29
editorial to workshop proceedings

Krukar, J., Schultz, C., & Bhatt, M. (2017). Towards Embodied 3D Isovists. In T. Heitor, M. Serra, J. P. S. M. Bacharel, & L. C. da Silva (Eds.), *Proceedings of the 11th Space Syntax Symposium.* Lisbon: Instituto Superior Tecnico.

Löwen, H., Schwering, A., **Krukar, J.**, & Winter, S. (2017). Perspectives in Externalizations of Mental Spatial Representations. In A. Bregt, T. Sarjakoski, R. van Lammeren, & F. Rip (Eds.), *Societal Geo-innovation. AGILE 2017. Lecture Notes in Geoinformation and Cartography* (pp. 111–127). doi: 10.1007/978-3-319-56759-4_7

Anacta, V. J. A., Humayun, M. I., Schwering, A., & **Krukar, J.** (2017). Investigating Representations of Places with Unclear Spatial Extent in Sketch Maps. In A. Bregt, T. Sarjakoski, R. van Lammeren, & F. Rip (Eds.), *Societal Geo-innovation. AGILE 2017. Lecture Notes in Geoinformation and Cartography* (pp. 3–17). doi: 10.1007/978-3-319-56759-4_1

Padmanaban, R., & **Krukar, J.** (2017). Increasing the Density of Local Landmarks in Wayfinding Instructions for the Visually Impaired. In G. Gartner & H. Huang (Eds.), *Progress in Location-Based Services 2016* (pp. 131–150). doi: 10.1007/978-3-319-47289-8_7
publication developed from the student's Master thesis (first author)

Krukar, J., & Conroy Dalton, R. (2013). Spatial Predictors of Eye Movement in a Gallery Setting. In P. Kiefer, I. Giannopoulos, M. Raubal, & M. Hegarty (Eds.), *Eye Tracking for Spatial Research, Proceedings of the 1st International Workshop (in conjunction with COSIT 2013)* (pp. 14–19). Scarborough, UK.

Krukar, J., & Conroy Dalton, R. (2013). Walk, Look, Remember: Art Galleries as Spaces Facilitating Memory. In Y. O. Kim, H. T. Park, & K. W. Seo (Eds.), *Proceedings of Ninth International Space Syntax Symposium* (pp. 074:1-19). Seoul: Sejong University Press.
presented at the plenary session of the symposium

extended abstracts and posters

Krukar, J., Mavros, P., & Hoelscher, C. (2020). Towards capturing focal/ambient attention during dynamic wayfinding. *Symposium on Eye Tracking Research and Applications*, 1–5. doi: 10.1145/3379157.3391417

Dalton, R., Dalton, N., Hölscher, C., Veddeler, C., **Krukar, J.**, & Wiberg, M. (2020). HabiTech : Inhabiting Buildings, Data & Technology. *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–8. doi: 10.1145/3334480.3375179

Schick, W., **Krukar, J.**, & Schwering, A. (2019). Functional verbal scales in route instructions of wayfinding assistance systems. *Speaking of Location (Workshop in conjunction with COSIT 2019)*. Regensburg, Germany.

Schwering, A., Mukhametov, S., **Krukar, J.** (2018). A Tool for Large-Scale Spatial Behavior Analysis in Indoor Environments. *Spatial Cognition 2018*, Tübingen, Germany.

Schwering, A., Sahib, J., **Krukar, J.**, Chipofya, M. (2018). Evaluating Sketch Maps Qualitatively: A new Software-Supported Method. *Spatial Cognition 2018*, Tübingen, Germany.

Münzer, S., Lörch, L., Schwering, A., **Krukar, J.**, Anacta, V.J. (2018). Wayfinding and Spatial Learning with Navigation Assistance. In *The 40th Annual Meeting of the Cognitive Science Society*, Madison, USA.

Löwen, H., **Krukar, J.**, Schwering, A. (2018). How should Orientation Maps look like? *The 21th AGILE International Conference on Geographic Information Science: AGILE 2018*, Lund, Sweden.

Löwen, H., **Krukar, J.**, Schwering, A. (2018). Towards automatically generating maps for wayfinding and orientation. *The 21th AGILE International Conference on Geographic Information Science: AGILE 2018*, Lund, Sweden.

Krukar, J. (2017). Cognitively Sustainable Built Environments. *Annual Meeting of the American Association of Geographers*. Boston, USA.

Krukar, J., & Schwering, A. (2016). What is Orientation? In T. B. Barkowsky, Z. Falomir Llansola, H. Schultheis, & J. van de Ven (Eds.), *KogWis: 13th Biannual Conference of the German Cognitive Science Society* (pp. 115–117). Bremen, Germany.

Anacta, V., **Krukar, J.**, Humayun, M., & Schwering, A. (2016). Visualizing salient features in spatial descriptions. *European Workshop on Image and Cognition (EWIC)*. Paris, France.

Du, G., Lohoff, L., **Krukar, J.**, & Mukhametov, S. (2016). Comparing Two Methods to Overcome Interaction Blindness on Public Displays. *Proceedings of the 5th ACM International Symposium on Pervasive Displays*, 243–244. doi: 10.1145/2914920.2940339
publication developed from the students' course project

von Stülpnagel, R., Wächter, L., Holland, N., & **Krukar, J.** (2016). Subjective Risk Perception in Urban Cycling - Assessing The Validity of Opinion-Based Volunteered Geographic Information. *Vulnerable Road Users Symposium at the 57. Tagung Experimentell Arbeitender Psychologen.* Heidelberg, Germany.

Krukar, J., & von Stülpnagel, R. (2015). Adjusting for Cognitive and Spatial Biases of VGI: The Case of Perceived Risks in Urban Cycling. In H. Skov-Petersen (Ed.), *Human mobility, cognition and GISc.* Copenhagen, Denmark.

Conroy Dalton, R. and **Krukar, J.** (2014; equal contribution). Augmenting Intuitive Navigation at Local Scale. *Spatial Search Specialist Meeting.* Santa Barbara, USA.

Krukar, J. (2014). Cognitively Biased Agent-Based Models. In B. Emo, K. Al Sayed, & T. Varoudis (Eds.), *Design Cognition and Behavior: Usability in the Built Environment. Proceedings of the workshop held at Spatial Cognition 2014* (pp. 4–5). Bremen, Germany.

Krukar, J. (2014). Spontaneous Memory of Art Exhibitions: Explanations from Eye-Tracking. In C. Freksa, B. Nebel, M. Hegarty, & T. Barkowsky (Eds.), *Spatial Cognition 2014: Poster Presentations* (pp. 60–63). Bremen, Germany.

Krukar, J., & Conroy Dalton, R. (2012). Towards a Unified Model of Building Usability. *22nd International Association People-Environment Studies (IAPS) Conference.* Glasgow, UK.

reproducibility reviews

Krukar, J. (2021). Reproducibility review of: A Socially Aware Huff Model for Destination Choice in Nature-based Tourism. *AGILE International Conference on Geographic Information Science 2021.* doi: 10.17605/OSF.IO/4CPM3

Open and Reproducible Science

Publishes data and code of most recent publications on the Open Science Framework profile.

Includes a simulation-based power analysis in recent psychological publications.

Member of the Reproducibility Committee for the AGILE International Conference on Geographic Information Science 2021. Author of "reproducibility reviews" reviewing the reproducibility of submitted conference contributions.

Editorial and Organisational Experience

Journals	**Künstliche Intelligenz - German Journal of Artificial Intelligence.** Guest co-editor of the special issue on *Landmark-Based Navigation in Cognitive Systems* (Springer). http://www.springer.com/computer/ai/journal/13218
Workshops	**HabiTech: Inhabiting Buildings, Data & Technology** Workshop accepted to be held at the *Computer-Human Information (CHI 2020) Conference* in Honolulu, USA. Conference cancelled due to COVID-19. http://chi2020.acm.org/
	Rethinking Wayfinding Support Systems Workshop organised at the *13th International Conference on Spatial Information Theory (COSIT 2017) in L'Aquila, Italy.* http://www.cosit2017.org

Program Committee Member

Eye Tracking for Spatial Research Workshop (ET4S 2020)
Eye Tracking Research and Application (ETRA 2019, 2020)
Conference on Spatial Information Theory (COSIT 2017, 2019)

Reviewer for

Journals	*Applied Cognitive Psychology* *Spatial Cognition and Computation* *Cognitive Research: Principles and Implications* *Environment and Planning B: Urban Analytics and City Science* *International Journal of Geographical Information Science* *Computers, Environment and Urban Systems* *Frontiers in Psychology* *Journal of Location-based Services* *Tourism Geographies* *ISPRS International Journal of Geo-information* *International Journal of Design Creativity and Innovation* *IxD&A: Interaction Design and Architecture Journal* *Journal of Urban Technology*
Conferences	*Conference on Spatial Information Theory (COSIT)* *Cognitive Science Society (CogSci)* *Eye-Tracking Research and Applications (ETRA)* *Spatial Cognition Conference* *Designing Interactive Systems Conference (DIS)*
Books	*European Handbook of Crowdsourced Geographic Information*, Ubiquity Press

Invited Academic Talks

July 2018	*Center for Cognitive Science, University of Freiburg, Germany.*
May 2016	*Chair of Cognitive Science, ETH Zürich, Switzerland.*
May 2015	*Center for Cognitive Science, University of Freiburg, Germany.*

Key Research Methods

Eye-tracking	desktop and mobile eye-tracking (Tobii, PupilLabs, SMI), including eye-tracking inside Virtual Reality (VIVE Pro Eye)
Virtual reality	designed and published virtual reality experiments in Unity 3D (driving simulator, pedestrian indoor navigation, indoor space perception)
Statistics	R, Bayesian multilevel models (incl. logistic, survival and other regression-based analyses), Structural Equation Models, circular statistics, writing R Shiny applications for exploratory analysis of complex data
Architectural analysis	Space Syntax, isovist analysis, co-visibility analysis

Languages

English	Full professional proficiency
Polish	Native proficiency
German	Intermediate

COMMUNICATION AND IMPACT

Interdisciplinarity

I actively maintain an interdisciplinary research profile by publishing and reviewing within top-tier journals across three core disciplines. I bring this experience into the classroom by delivering lectures that emphasize interdisciplinary applications of geoinformatics. I submit interdisciplinary research grant proposals that undergo simultaneous peer-review from multiple discipline committees. The table documents selected examples of my involvement in three core disciplines.

	cognitive psychology	**architectural science**	**geoinformatics**
published in...	Journal of Environmental Psychology	Environment and Planning B	Journal of Spatial Information Science
reviewer for...	Spatial Cognition and Computation	Computers, Environment and Urban Systems	International Journal of Geographical Information Science
teaching...	Spatial Cognition course	classes on Space Syntax and indoor wayfinding	Wayfinding and Navigation course

Invited Talks and Expert Meetings Outside Academia

Sep 2019 **"Wayfinding Through Orientation".** *Future Cities Lab, Singapore.*
Invited lunch-time talk for staff and visitors.

Jun 2015 **"Rethinking the Senses: Experimental Approaches and Methods in the Art Museum."** *TATE Modern gallery, London.*
Invited as a member of an expert discussion panel. Meeting co-organised by the Centre for the Study of the Senses at the University of London.

Feb 2014 **"What are you staring at? Space, Psychology, Eye-Tracking."** *BWA-Dizajn Centre for Contemporary Arts, Wroclaw, Poland.*
Invited to design and conduct a workshop on Eye-Tracking and Space Syntax techniques for curatorial design.

Public Engagement

2021 **Article for "der architekt".** *Association of German Architects, Berlin.*
Invited to contribute an article to the official journal of the Association of German Architects on the topic of architectural psychology and wayfinding.

2016-2020 **"Wayfinding Through Orientation".** *Institute for Geoinformatics, University of Münster, Germany.*
Contributed to a series of press releases, and the production of promotional video material explaining the project topic to the general public. Press articles and interviews on the subject of navigational skills.

2012 **Popular science articles.** *"Zielone Miasto" ["Green City"] Magazine, Poland.*
Wrote a series of articles on sustainability and city livability [in Polish].

Policy

Mar 2014 **Visual Museum Experiment.** *Cultural NGOs, Warsaw, Poland.*
Member of a working group of academics, curators, and art educators designing action scenarios for museums in Poland. Scenarios and guidelines published under a Creative Commons licence.
http://wizualnyeksperymentmuzealny.wordpress.com

Industry Outreach

2016-2020 **Wayfinding Through Orientation**
Supervision of a MSc thesis conducted in collaboration with **BOSCH**: *Driver stress level prediction* by Nico Steffens.

Supervision of a MSc thesis conducted in collaboration with **BWM**: *Conceptual Design, Implementation and Evaluation of a Motorbike Group Riding System with a Focus on a Group Navigation Feature* by Fabian Röhr.

Co-wrote a proof-of-concept grant proposing a pathway for bringing the "Wayfinding Through Orientation" prototype to the market (outcome: funder's waiting list).

TEACHING

Staff Training Delivered

2019 **Bayesian Mixed Effect Models with brms R package**. *Cognition, Perception and Urban Behaviour Group, Future Cities Lab, Singapore.*

2018 **Linear-Mixed Effect Models**. *Institute for Geoinformatics, Münster.*

Courses Designed and Taught

Delivered teaching for Bachelor (BSc) in Geoinformatics, Master of Science (MSc) in Geoinformatics, and Master of Science (MSc) in Geo-spatial Technologies:

2021 *Wayfinding and Navigation* (MSc; lecture and seminar)
2020 *Spatial Cognition* (MSc; lecture and seminar)
2019 *Wayfinding and Navigation* (MSc; lecture and seminar)
2018 *Spatial Cognition* (MSc; lecture and seminar)
2017 *Spatial Cognition* (MSc; lecture and seminar)
2016 *Research Methods in HCI* (MSc; lecture and seminar)
Interaction with Geographic Information (BSc; lecture and seminar)
2015 *Research Methods in HCI* (MSc; lecture and seminar)
SenseBox for People-Centred Urban Planning (MSc, study project)
Architectural Design (MSc, study project)
Human-Computer Interaction and Usability (BSc; seminar and lecture)

Student Supervison

Supervised 3 PhD students, 14 MSc theses, 4 BSc theses, and 1-2 student assistants per semester.

Graduate School: Moderating the meetings of the **Graduate School of Geoinformatics** - an internal body providing support to the Institute's PhD students through monthly, research skills-oriented meetings. Duties: conceptualization of content, meeting organization and moderation.

PhD: Co-supervising 3 PhD students **within the *"WayTO"* ERC project** (co-supervision documented by joint publications):

Marcelo de Lima Galvao (PhD ongoing)
Route Map Schematisation with Landmarks

Heinrich Löwen (disputation on 28.05.2020)
Orientation Information in Wayfinding Instructions: Selection and Evaluation of Route Dependent Information for Wayfinding and Orientation Support

Vanessa Joy Anacta (disputation on 8.10.2018)
Empirical Investigation of Orientation Information in Wayfinding Instructions.

	Regularly advising other PhD students at the Institute on the issues of experimental design and statistical analysis.
MSc theses	*Stop and Think: Pauses During Giving Route Instructions* - Yusi Ji *Landmark-based Wayfinding System for the Blind* - Rajchandar Padmanaban *Visualizing Off-Screen Landmarks on Maps for Mobile Devices* - Maurin Radtke *Conceptual Design, Implementation and Evaluation of a Motorbike Group Riding System with a Focus on a Group Navigation Feature* - Fabian Röhr (in colaboration with BMW) *Location-Based Notifications to Encourage VGI Participation and Contribution: Combining persuasive technologies with citizen science for controlled intervention* - Joanna Kwong *Environmental Forms and Route Directions: Influences on the Acquisition of Spatial Knowledge* - Stefan Fuest *Predefining regionalised environments for assisted navigation* - Caitlin Lara Thorn *Pointing to a place across a barrier: Study of barriers effect on human survey knowledge* - Sarah Abdelkader *A Gesture Inspired Navigation Support* - Shankarlingam Sundaresan *Analysis of the validity and reliability of the Sketch Map Classifier tool* - Laura Meierkort *Embodied 3d Isovist as a Predictor of Spatial Experience* - Charu Manivannan *The influence of tasks on the reliability of sketch map analysis methods* - Antonia van Eek *Driver stress level prediction* - Nico Steffens (in collaboration with Bosch GmbH)
BSc theses	*Space Syntax and Navigation* - Bartosz Mazurkiewicz *Towards a 'Calm' Navigational System* - Boris Stöcker *Visibility Analysis of the GEO1 and Psychology Buildings, in Comparison (Space Syntax)* - Lasse Einfeldt *Designing a Research Tool for Studying Real-time Uncertainty in Inferring Spatial Knowledge while Drawing a Sketch Map* - Torben Kraft
Assistants	Overlooking and supervising research of 1–2 Student Assistants per semester.
External	External PhD co-supervisor (2019–): Dajana Snopková . *Department of Geography, Masaryk University, Brno, Czech Republic.* External examiner (2019). *MSc Programme, Geo-Information Science and Earth Observation (ITC), University of Twente, The Netherlands.*

SERVICE

ethics	Head of the Institute's Ethics Committee (2019–). Designed and supervised the implementation of an institute-wide ethics clearance policy for all studies involving human participants (2017-2018).
data protection	Co-designed and supervised the implementation of an institute-wide data protection policy and server infrastructure (2017-2018).

REFERENCES

Prof. Angela Schwering

Current employer and PI of the ERC project which sponsors my position.

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Head of Spatial Intelligence Lab

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Heisenbergstr. 2
48149 Muenster, Germany

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email: schwering@uni-muenster.de

Prof. Christoph Hölscher

External examiner of my doctoral project, ongoing collaborator, co-author on project proposals, host at the Future Cities Lab in Singapore (08.2019-09.2019).

Professor of Cognitive Science

ETH Zürich, Switzerland
Future Cities Lab, Singapore

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Clausiusstrasse 59
8092 Zurich, Switzerland

phone: +41 44 632 31 96
email: christoph.hoelscher@gess.ethz.ch

Prof. Ruth Conroy Dalton

Former principal supervisor of my PhD project and an ongoing collaborator.

Inaugural Professor of Architecture

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Lancaster University
Lancaster, UK

phone: +44 (0)1524 510593
email: r.dalton1@lancaster.ac.uk