

# CURRICULUM VITAE

## PROF. DR. MARTIN RAUBAL

Swiss Federal Institute of Technology, ETH Zurich  
Dept. Civil, Environmental and Geomatic Engineering  
Institute of Cartography and Geoinformation

### Current Affiliation

Professor for Geoinformation-Engineering  
ETH Zurich  
Dept. Civil, Environmental and Geomatic Engineering  
Institute of Cartography and Geoinformation

HIL G 27.3  
Wolfgang-Pauli-Strasse 15  
8093 Zurich, Switzerland  
[mraubal@ethz.ch](mailto:mraubal@ethz.ch)  
[www.karto.ethz.ch](http://www.karto.ethz.ch)

### Personal

Nationality: Austrian  
Date of Birth: 11 September 1968  
Place of Birth: Vienna, Austria  
Status: Married, 2 children  
Languages: German, English, Italian (beginner's level)

### Education

**Habilitation** (Venia legendi in Geoinformatics), University of Münster, Germany, 2006  
Thesis title: Cognitive Engineering for Geoinformatics

**Dr. techn.**, Institute for Geoinformation, Vienna University of Technology, Austria, 2001 (with honors)  
Thesis title: Agent-based Simulation of Human Wayfinding: A Perceptual Model for Unfamiliar Buildings  
Advisors: Andrew U. Frank, Werner Kuhn

**Dipl.-Ing. (M.S.)**, Surveying Engineering, Vienna University of Technology, Austria, 1998  
Advisor: Andrew U. Frank

**M.S.**, Spatial Information Science and Engineering, University of Maine, U.S.A., 1997  
GPA: 4.0

Thesis title: Structuring Wayfinding Tasks with Image Schemata  
Advisors: Max J. Egenhofer, M. Kate Beard-Tisdale, Werner Kuhn, and Andrew U. Frank

## Professional Appointments

- Apr. 2011 – Full Professor for Geoinformation-Engineering  
Swiss Federal Institute of Technology, ETH Zurich, Switzerland
- Oct. 2011 – Member of the Energy Science Center, ETH Zurich
- Mar. 2011 – Adjunct Professor  
Department of Geography  
University of California, Santa Barbara, U.S.A.
- 2008 – 2011 Associate Professor  
Department of Geography  
University of California, Santa Barbara, U.S.A.
- 2008 – Affiliated faculty member  
Department of Computer Science  
University of California, Santa Barbara, U.S.A.
- 2007 – Faculty member of Cognitive Science Program  
University of California, Santa Barbara, U.S.A.
- 2006 – 2008 Assistant Professor  
Department of Geography  
University of California, Santa Barbara, U.S.A.
- 2005 – 2006 Junior Professor (W1)  
Institute for Geoinformatics  
University of Münster, Germany
- 2004 – 2005 Assistant Professor (C1)  
Institute for Geoinformatics  
University of Münster, Germany
- Oct. 2003 – Sep. 2004 Substitute Associate Professor (C3)  
Institute for Geoinformatics  
University of Münster, Germany
- 2002 – 2003 Assistant Professor (C1)  
Institute for Geoinformatics  
University of Münster, Germany
- 1998 – 2002 (Graduate) Research Assistant  
Institute for Geoinformation  
Vienna University of Technology, Austria
- 1996 – 1997 Graduate Research Assistant  
National Center for Geographic Information and Analysis (NCGIA) and  
Department of Spatial Information Science and Engineering  
University of Maine, U.S.A.
- 1995 – 1996 Teaching Assistant  
Department of Geoinformation  
Vienna University of Technology, Austria

## **Awards and Honors**

- 2010 ACM GIS 2010 Best Fast Forward Presentation Runners Up for “Time Geography Inverted: Recognizing Intentions in Space and Time” (Kiefer, Raubal, and Schlieder)
- 2010 AGILE 2010 Best Paper Award for “A Spatio-Temporal Model Towards Ad-Hoc Collaborative Decision-Making” (Raubal and Winter)
- 2008 U.V. Helava Award (SFr. 10,000) for the period 2004-2007 for “Time geography for ad-hoc shared-ride trip planning in mobile geosensor networks” (Raubal, Winter, Teßmann, and Gaisbauer)
- 2008 ISPRS Journal 2007 Best Paper Award for “Time geography for ad-hoc shared-ride trip planning in mobile geosensor networks” (Raubal, Winter, Teßmann, and Gaisbauer)
- 2005 Intergraph Award (1,000\$) for most innovative research paper at AGILE 2005 (“Mappings for Cognitive Semantic Interoperability”)
- 2003 AGILE 2003 Best Paper Award for “Implementing Semantic Reference Systems” (Kuhn and Raubal)
- 2003 Intergraph GeoMedia Education Grant (to Institute for Geoinformatics, University of Münster) based on ‘Finding suitable locations for airports in Germany’ and ‘Skill building lesson plans’ from Introduction to Digital Cartography course 2002
- 1997 Award for Outstanding Academic Achievement, University of Maine
- 1996, 1997 Research Assistantship, funded by the National Center for Geographic Information and Analysis (NCGIA), U.S.A.
- 1996 Scholarship for scientific work in a foreign country, Austrian Government

## **Professional Activities**

- 2012 Member of scientific committee of 9<sup>th</sup> International Symposium on Location-Based Services (Munich, Germany)
- 2012 Member of program committee of GIScience 2012 – 7<sup>th</sup> International Conference on Geographic Information Science (Columbus, Ohio, USA)
- 2012 Member of program committee of 15<sup>th</sup> AGILE International Conference on Geographic Information Science (Avignon, France)
- 2012 Member of program committee of Geoinformatik 2012 (Braunschweig, Germany)
- 2011 Invited speaker at the Copenhagen Center for Computational Social Science Inaugural Workshop (Copenhagen, Denmark).
- 2011 Elected as member of AGILE (Association Geographic Information Laboratories Europe) Council for 4-year term
- 2011 Member of program committee of ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (GIS) 2011, Chicago, Illinois, U.S.A.

- 2011 Member of scientific committee of 8<sup>th</sup> International Symposium on Location-Based Services (Vienna, Austria)
- 2011 Co-organizer of Workshop on Cognitive Engineering for Mobile GIS (within COSIT 2011), Belfast, Maine, U.S.A.
- 2011 Member of program committee of COSIT 2011 – International Conference on Spatial Information Theory (Belfast, Maine, U.S.A.)
- 2011 Member of program committee of Geoinformatik 2011 (Münster, Germany)
- 2011 Member of program committee of 14<sup>th</sup> AGILE International Conference on Geographic Information Science (Utrecht, The Netherlands)
- 2011 Member of program committee of 22<sup>nd</sup> International Joint Conference On Artificial Intelligence (IJCAI 2011), Barcelona, Spain
- 2010 Invited participant at Specialist meeting on Spatio-Temporal Constraints on Social Networks (Santa Barbara, U.S.A.)
- 2010 Member of program committee of 3<sup>rd</sup> International Workshop on Location and the Web (LocWeb 2010), (within Internet of Things 2010, Tokyo, Japan)
- 2010 Invited speaker at International Symposium Cognitive Systems Engineering: Spatial Competence in Assistance - Training – Procedures (Etelsen Castle, Germany)
- 2010 Visiting Professor at Cognitive Systems Group, University of Bremen, Germany (June 2010)
- 2010 Member of program committee of GIScience 2010 – 6<sup>th</sup> International Conference on Geographic Information Science (Zurich, Switzerland)
- 2010 Member of program committee of Workshop On Linked Spatiotemporal Data (within GIScience 2010, Zurich, Switzerland)
- 2010 Member of program committee of Doctoral Colloquium, GIScience 2010 (Zurich, Switzerland)
- 2010 Member of program committee of Workshop Towards Digital Earth: Search, Discover and Share Geospatial Data (within Future Internet Symposium 2010, Berlin, Germany)
- 2010 Member of program committee of International Conference Spatial Cognition 2010 (Mt. Hood / Portland, Oregon, USA)
- 2010 Member of program committee of 2<sup>nd</sup> International Workshop on Spatial Awareness and Geographic Knowledge Acquisition with Small Mobile Devices (within Spatial Cognition 2010, Mt. Hood / Portland, Oregon, USA)
- 2010 Member of program committee of 2<sup>nd</sup> International Workshop on Theory and Applications Frontier of Location Based Services (within MUE'10, San Diego, CA, U.S.A.)
- 2010 Member of program committee of 13<sup>th</sup> AGILE International Conference on Geographic Information Science (Guimarães, Portugal)

- 2010 Member of program committee of Geoinformatik 2010 (Kiel, Germany)
- 2009 Invited speaker at StratAG (Strategic Research in Advanced Geotechnologies) LBS Strand Kick-off Meeting (Maynooth, Ireland)
- 2009 Program Co-Chair of GeoS 2009 – Third International Conference on Geospatial Semantics (Mexico City, Mexico)
- 2009 Tutorial organizer and lecturer—Perspectives on semantic similarity for the spatial sciences (within COSIT 2009, Aber Wrac’h, France), with A. Klippel
- 2009 Member of program committee of COSIT 2009 – International Conference on Spatial Information Theory (Aber Wrac’h, France)
- 2009 Member of program committee of Workshop on Presenting Spatial Information: Granularity, Relevance, and Integration (within COSIT’09, Aber Wrac’h, France)
- 2009 Member of program committee of Workshop GI@EarlyWarning (within AGILE’09, Hannover, Germany)
- 2009 Member of program committee of International Workshop on Theory and Applications Frontier of Location Based Services (within MUE’09, Qingdao, China)
- 2009 Member of program committee of 12<sup>th</sup> AGILE International Conference on Geographic Information Science (Hannover, Germany)
- 2009 Member of program committee of Geoinformatik 2009 – Geoinformatics – benefits for environment and society (Osnabrueck, Germany)
- 2008 Elected as member of UCGIS (University Consortium of Geographic Information Science) Board of Directors
- 2008 Member of program committee of International Conference Spatial Cognition 2008 (Freiburg, Germany)
- 2008 Member of program committee of International Workshop on You-Are-Here-Maps: Creating a Sense of Place through Map-like Representations (within Spatial Cognition 2008), (Freiburg, Germany)
- 2008 Co-organizer of First International Workshop on Information Semantics and its Implications for Geographic Analysis (within GIScience 2008), Park City, U.S.A.
- 2008 Co-organizer of First International Workshop on Trends in Pervasive and Ubiquitous Geotechnology and Geoinformation (within GIScience 2008), Park City, U.S.A.
- 2008 Member of program committee of GIScience 2008 – 5<sup>th</sup> International Conference on Geographic Information Science (Park City, U.S.A.)
- 2008 Member of program committee of GI-Days Münster 2008 – Interoperability and spatial processing in GI applications
- 2008 Invited speaker at UCTC 2008, 14th University of California Transportation Center student conference (Santa Barbara, U.S.A.)

- 2008 Member of program committee of 1<sup>st</sup> International Workshop on Location and the Web (LocWeb 2008), (Beijing, China)
- 2008 Member of program committee of 11<sup>th</sup> AGILE International Conference on Geographic Information Science (Girona, Spain)
- 2007 Invited speaker at 4th Junior Professors Symposium (Bremen, Germany)
- 2007 Member of program committee of 7th International Workshop on Web and Wireless GIS (W2GIS'07) (Cardiff, UK)
- 2007 Co-organizer of Workshop on Semantic Similarity Measurement and Geospatial Applications (within COSIT 2007), Mt Eliza, Melbourne, Australia
- 2007 Member of program committee of COSIT 2007 – Ninth International Conference on Spatial Information Theory (Mt Eliza, Melbourne, Australia)
- 2007 Member of review committee of Applications of Spatial Cognition for Intelligent Assistance Systems Workshop (at KI 2007 - 30th German Conference on Artificial Intelligence (Osnabrueck, Germany)
- 2007 Member of program committee of GI-Days 2007 – Young Researchers Forum (Münster, Germany)
- 2007 Member of program committee of 10<sup>th</sup> AGILE International Conference on Geographic Information Science (Aalborg, Denmark)
- 2007 Personal invitation to 13<sup>th</sup> German-American Frontiers of Science Symposium (Irvine, California) by Alexander von Humboldt-Foundation, Germany (in cooperation with U.S. National Academy of Sciences).
- 2006 Program Chair of GIScience 2006 – Fourth International Conference on Geographic Information Science (Münster, Germany)
- 2006 Invited speaker at 9<sup>th</sup> Austrian Surveyor's Day (Krems, Austria)
- 2006 Visiting Professor at the Institute for Geoinformation and Cartography, Vienna University of Technology, Austria (1 week, sponsored by Erasmus)
- 2006 Member of program committee of Space Syntax and Spatial Cognition Workshop (Bremen, Germany)
- 2006 Member of review committee of Spatial Cognition 2006 conference (Bremen, Germany)
- 2006 Member of program committee of 3rd CoMoGIS2006 International Workshop On Conceptual Modeling for Geographical Information Systems (Tucson, Arizona)
- 2006 Member of program committee of 6th International Workshop on Web and Wireless GIS (W2GIS'06) (Hong Kong, China)
- 2006 Member of scientific committee of MDSGEO'06 - 1st International Workshop on Modern Decision Support in Geographical Domains: Models, Methods, and Tools (Thessaloniki, Greece)

- 2006 Invited participant at Dagstuhl Seminar “Towards Affordance-Based Robot Control” (Dagstuhl castle, Germany)
- 2006 Member of program committee of AMTA’06 – First International Workshop on Agents and Multiagent Systems, from Theory to Application (Québec City, Canada)
- 2006 Member of program committee of AGILE Conference 2006 (Visegrad, Hungary)
- 2005 Invited participant at Dagstuhl Seminar “Spatial Cognition: Specialization and Integration” (Dagstuhl castle, Germany)
- 2005 Organizer of Workshop on Cognitive Engineering for Geospatial Services (within COSIT 2005), Ellicottville, New York (with Pragma Agarwal)
- 2005 Guest lecturer at the Department of Geography, University of Klagenfurt, Austria (1 week, sponsored by Erasmus)
- 2005 Elected as member of AGILE (Association Geographic Information Laboratories Europe) Council for 4-year term
- 2005 Member of program committee of COSIT 2005 – (Ellicottville, New York)
- 2005 Member of program committee of GI-Days Münster 2005 – Geosensor networks: from research to applications
- 2005 Member of program committee of AGILE Conference 2005 (Estoril, Portugal)
- 2004 Invited participant at NCGIA Specialist meeting on Spatial Webs (Santa Barbara, U.S.A.)
- 2004 Co-organizer of Workshop on the Potential of Cognitive Semantics for Ontologies (within FOIS 2004), Torino, Italy
- 2004 Guest lecturer at the Department of Geography, University of Klagenfurt, Austria (1 week, sponsored by Erasmus)
- 2004 Member of review committee of Spatial Cognition 2004 conference (Frauenchiemsee Island, Bavaria, Germany)
- 2004 Member of program committee of GIScience 2004 – Third International Conference on Geographic Information Science (Maryland, U.S.A.)
- 2004 Program Chair of GI-Days Münster 2004 – GI & Mobility
- 2004 Invited speaker at Euresco Conference on Geovisualisation (Crete, Greece)
- 2004 Member of program committee of AGILE Conference 2004 – GI in the European Research Area (Crete, Greece)
- 2003 Invited lecturer at the International Spatial Cognition Summer Institute, Bad Zwischenahn, Germany (sponsored by the International Quality Network on Spatial Cognition)
- 2003 Guest lecturer at the Department of Geography, University of Klagenfurt, Austria (1 week, sponsored by Erasmus)

2003	Euresco Conference Modeling for Wayfinding Services, Bad Herrenalb, Germany: Invited speaker
2003	Member of program committee of GI-Days Münster 2003 – Geodata- and service infrastructures: from research to applications
2002	Visitor at the Department of Geography, University of Utah, Salt Lake City (2 weeks, sponsored by DAAD, Germany)
2002	ACTOR2002 (NSF-sponsored research workshop on Action-Oriented Approaches in Geographic Information Science, Maine, U.S.A.): Invited participant
1996	NCGIA I21 - Specialist Meeting “Formal Models of Common-Sense Geographic Worlds” in San Marcos, Texas (Oct. 30th - Nov. 3rd 1996): Participant and rapporteur

### **Funded projects**

2010 – 2011	The Synergy of Transportation, Social, and Data Networks, Spring 2010 Dissertation Award – Edward Pultar (U.S. Department of Transportation; PI: Raubal)	\$ 20,000
2009 – 2011	Geospatial Feature Conflation: Conceptual, Statistical, and Optimization Approaches (National Geospatial Intelligence Agency – NGA University Research Initiatives; PI: Goodchild, Co-PI: Raubal)	\$ 288,548
2009 – 2010	A Metric Conceptual Space Algebra for the Semantic Web (Faculty Research Grant, Academic Senate, University of California, Santa Barbara; PI: Raubal)	\$ 5,297
2008 – 2009	Instructional Improvement Grant: Undergraduate / Graduate Geography GIScience Course Series (Academic Senate, University of California, Santa Barbara; PIs: Clarke, Goodchild, Raubal)	\$ 11,748
2006 – 2008	Semantic Similarity Measurement for Role-Governed Geospatial Categories (German Research Foundation, PI: Raubal)	€ 265,000
2006 – 2007	Novel Technologies for Spatial Decision Support (German Academic Exchange Service, PI: Raubal)	€ 10,240
2004 – 2006	Semantic Reference Systems for Geospatial Information (German Research Foundation; PI: Kuhn, Co-PI: Raubal)	€ 130,000
2004	Researcher grant (University of Münster, PI: Raubal)	€ 4,000

### **Active project participation**

2009 – 2011	Virtual Co-laboratory for Policy Analysis in Greater L.A., Multicampus Research Programs and Initiatives Project (UC): GIS and visualization
2004 – 2006	MEDIS (Towards sustainable water use on Mediterranean Islands: addressing conflicting demands and varying hydrological, social and economic conditions) Project (EC): Project leader at ifgi

- 1998 – 2000            PANEL-GI (Pan European Link for Geographical Information) Project (EC): Organization and research
- 1998 – 1999            COMMUTER (Co-operative multi-dimensional multimedia and topological elements reintegration) Project (EC): Research

### **Editorial board**

Transactions in GIS, *Blackwell* (2006 - )  
 Journal of Location Based Services, *Taylor & Francis* (2006 - )  
 Geography Compass, *Blackwell* (2006 - )  
 Journal of Spatial Information Science, *Open-access* (2009 - )  
 Semantic Web Journal, *IOS Press* (2009 - 2012)

### **Referee for**

#### *Journals*

International Journal of Geographical Information Science; Transactions in GIS; GeoInformatica; Spatial Cognition and Computation; ISPRS Journal of Photogrammetry and Remote Sensing; Professional Geographer; Geography Compass; Cartography and Geographic Information Science; Cartographica; Environment & Planning B; Journal of Geographical Systems; Journal of Location-Based Services; Memory & Cognition; International Journal of Applied Earth Observation and Geoinformation; International Journal of Sustainable Transportation; IET Intelligent Transport Systems; Journal of Transport Geography; Computers, Environment and Urban Systems; Environmental Engineering Science; International Journal of Spatial Data Infrastructures Research; Data & Knowledge Engineering; Tourism Geographies; Photogrammetrie, Fernerkundung, Geoinformation (PFG); gis.SCIENCE; Automation in Construction; Forestry: An International Journal of Forest Research; Künstliche Intelligenz (KI)

#### *Conferences*

Conference on Spatial Information Theory, COSIT (2003 - 2011); Conference on Geographic Information Science, GIScience (2004, 2008 - 2012); International Joint Conference On Artificial Intelligence, IJCAI (2011); International Conference on Intelligent User Interfaces, IUI (2012); Conference on Human Factors in Computing Systems, CHI (2006); Spatial Cognition (2004 - 2010); Symposium on Location Based Services, LBS (2011 - 2012); Conference on Ubiquitous Computing, UbiComp (2003, 2008); International Conference on Geosensor Networks, GSN (2011); AGILE Conference on Geographic Information Science (2004 - 2012); Münster GI-Days (2003 - 2008); Geoinformatik (2009 - 2012); World Council on Transportation Research (WCTR) Meeting (2007)

#### *Organizations and Programs*

U.S. National Science Foundation; Science Foundation Ireland; German Science Foundation; GEOIDE, Canada; Austrian Federal Ministry of Science and Research (BMWF); Korean-Swiss Science and Technology Program

### **University Service**

- 2011 –                    Vice-Chair, Institute of Cartography and Geoinformation, ETH Zurich

2009 – 2011	Vice-Chair, Department of Geography, UCSB
2009 – 2011	Chair of Graduate Committee, Department of Geography, UCSB
2009 – 2010	Enterprise Information Systems Planning Group, UCSB
2009	Student Information System Replacement Steering Committee, UCSB
2009 – 2011	Academic Technology Planning Group, UCSB
2008 – 2010	Committee on Computing and Communications, UC
2008 – 2010	Academic Senate Council on Research and Instructional Resources, UCSB
2008 – 2010	Senate Committee on Library, Information, and Instructional Resources, UCSB
2008 – 2009	Curriculum Committee, Department of Geography, UCSB
2007 – 2009	Events Committee, Department of Geography, UCSB
2007 – 2011	Graduate Committee, Department of Geography, UCSB
2007 – 2011	Cognitive Science Program Steering Committee, UCSB
2007 – 2009	Advisory Committee on Campus Access, UCSB
2007 – 2008	Information Systems & Services Advisory Committee, Department of Geography, UCSB
2005 – 2006	Habilitation commission, School of Geosciences, University of Münster
2005 – 2006	Examination board for Geoinformatics, Institute for Geoinformatics, University of Münster
2005 – 2006	Course coordinator, Institute for Geoinformatics, University of Münster
2004 – 2006	Board of directors, Institute for Geoinformatics, University of Münster
2003 – 2006	Student advisor for Geoinformatics, Institute for Geoinformatics, University of Münster
2003 – 2005	Ph.D. commission, School of Geosciences, University of Münster
2003 – 2004	Faculty Search Committee (C3, Geoinformatics), Institute for Geoinformatics, University of Münster
2003 – 2004	Faculty committee, School of Geosciences, University of Münster
2002 – 2003	Faculty Search Committee (C4, Geoinformatics), Institute for Geoinformatics, University of Münster

### **Industry Experience**

1993 – 1995	Part-time work as a surveyor for the Surveying Bureau “Feuereis & Lichtenstoeger”, Austria
1987 – 1990	6 months full-time work as a surveyor for the Austrian Surveying Agency (BEV)

## Teaching

Spring 2012	Geographic Information Systems II (Lecture, Undergrad)
Fall 2011	Geographic Information Systems I (Lecture, Undergrad) Geographic Information Systems III (Lecture, Grad)
Winter 2010	GEOG 288MR, Location Based Services (Seminar, Grad)
Summer 2010	Semantic Similarity Measurement and Spatial Applications (Seminar at University of Bremen, with Alexander Klippel)
Spring 2010	GEOG 176C, GIS Applications (Lecture & Labs, Undergrad) GEOG 596, Directed Reading & Research “Functions & Applications of Spatial Cognition” (with Dan Montello)
Winter 2009	GEOG 200B, Introduction to Geographic Research (Lecture Seminar, Grad) INT 200B, Seminar in Cognitive Science (Seminar, Grad)
Fall 2009	GEOG 183, Cartographic Design & Geovisualization (Lectures & Labs, Undergrad)
Summer 2009	Geographic Visualization (Lectures & Labs at University of Münster)
Spring 2009	GEOG 231, Cognitive Issues in Geographic Information Science (Seminar, Grad)
Winter 2008	GEOG 200B, Introduction to Geographic Research (Lecture Seminar, Grad)
Fall 2008	GEOG 183, Cartographic Design & Geovisualization (Lectures & Labs, Undergrad)
Spring 2008	GEOG 184C, Geographic Visualization (Lecture & Labs, Undergrad) GEOG 288MR, Semantic Similarity Measurement and Geographic Applications (Seminar, Grad)
Fall 2007	GEOG 176A, Intro to GIS (Lecture & Labs, Undergrad) GEOG 118, Cartographic Design (Lecture & Labs, Undergrad)
Spring 2007	GEOG 184C, Geographic Visualization (Lecture & Labs, Undergrad) GEOG 288MR, Time in GIS (Seminar, Grad)
Winter 2006	GEOG 596, Directed Reading & Research “Applied Spatial Cognition” (with Dan Montello) GEOG 597, Independent Study – PhD Exam Introduction to Digital Cartography (Labs, 1 <sup>st</sup> year)
Summer 2006	Introduction to Digital Cartography (Labs, 2 <sup>nd</sup> year) Pedestrian navigation services (Study project, 4 <sup>th</sup> year) Introduction to Geographic Information Science (Lecture part, 3 <sup>rd</sup> year) Semantics and Ontologies in Geographic Information Services – Theory and Applications (Lecture & Labs at Vienna University of Technology; with M. Lutz)
Winter 2005	Cognitive Aspects in Geographic Information Science (Seminar, 4 <sup>th</sup> year) Pedestrian navigation services (Study project, 4 <sup>th</sup> year) Dynamic route planning (Labs, 4 <sup>th</sup> year)

Summer 2005	Introduction to Research Methods (Seminar, 4 <sup>th</sup> year) Introduction to Digital Cartography (Labs, 2 <sup>nd</sup> year) Semantics and Ontologies in Geographic Information Services – Theory and Applications (Workshop at University of Klagenfurt; with M. Lutz and M. Hall)
Winter 2004	Time in GIS (Seminar, 4 <sup>th</sup> year) Introduction to Geoinformatics (Labs and lecture part, 2 <sup>nd</sup> year)
Summer 2004	Introduction to Research Methods (Seminar, 4 <sup>th</sup> year) Introduction to Digital Cartography (Labs, 2 <sup>nd</sup> year) Mobile Geocomputing (Labs at University of Klagenfurt, 2 <sup>nd</sup> year)
Winter 2003	Cognitive Aspects in Geographic Information Science (Seminar, 4 <sup>th</sup> year) Introduction to Geoinformatics (Labs and lecture part, 2 <sup>nd</sup> year) Introduction to Digital Cartography (Labs, 2 <sup>nd</sup> year)
Summer 2003	Cognitive Aspects of Wayfinding (Lecture at Int. Spatial Cognition Summer Institute; with H. Hochmair and S. Timpf) Evaluation of GIS (Lecture at University of Klagenfurt, 2 <sup>nd</sup> year) Evaluation of GIS (Seminar, 4 <sup>th</sup> year) Introduction to Digital Cartography (Labs and lecture part, 2 <sup>nd</sup> year)
Winter 2002	Spatial Cognition and Wayfinding (Seminar, 4 <sup>th</sup> year) Introduction to Geoinformatics (Labs, 2 <sup>nd</sup> year)
Summer 2002	Introduction to Digital Cartography (Labs and lecture part, 2 <sup>nd</sup> year)
Winter 2001	Evaluation of GIS (Lectures & Labs, 5 <sup>th</sup> year) Introduction to GIS (Labs, 2 <sup>nd</sup> year) Spatial Information Systems (Labs, 3 <sup>rd</sup> year) Geographic Information Systems for Computer Scientists (Labs) Spatial Information Systems – Field Camp (Analysis, 4 <sup>th</sup> year)
Summer 2001	Geometric Data Management (Labs, 4 <sup>th</sup> year) Geographic Information Systems for Computer Scientists (Labs) Public domain Geographic Information Systems (Labs, 4 <sup>th</sup> year)
Winter 2000	Evaluation of GIS (Lectures & Labs, 5 <sup>th</sup> year) Spatial Information Systems (Labs, 3 <sup>rd</sup> year) Geographic Information Systems for Computer Scientists (Labs) Spatial Information Systems – Field Camp (Analysis, 4 <sup>th</sup> year) Temporal Data for Geographic Information Systems (Labs, 4 <sup>th</sup> year)
Summer 2000	Geometric Data Management (Labs, 4 <sup>th</sup> year) Geographic Information Systems for Computer Scientists (Labs)
Winter 1999	Spatial Information Systems (Labs, 3 <sup>rd</sup> year) Geographic Information Systems for Computer Scientists (Labs)
Summer 1999	Geometric Data Management (Labs, 4 <sup>th</sup> year) Geographic Information Systems for Computer Scientists (Labs)
Winter 1995	Spatial Information Systems – Field Camp (Analysis, 4 <sup>th</sup> year, Teaching Assistant)

#### **Ph.D. theses supervised (\*: co-supervised)**

1. Giannopoulos, I. (in progress): Tbd. Institute of Cartography and Geoinformation, ETH Zurich.
2. Grassi, S. (in progress): Conception and development of a GIS tool for integrated analysis of renewable energy resource deployment. Institute of Cartography and Geoinformation, ETH Zurich.
3. McKenzie, G. (in progress): Social Constraints on Spatio-temporal Geography. Department of Geography, University of California, Santa Barbara, U.S.A.
4. Yuan, Y. (in progress): Correlating human mobility and mobile phone usage. Department of Geography, University of California, Santa Barbara, U.S.A.
5. Adams, B. (in progress): A Formal Conceptual Space Algebra and Associated Markup Language for Use in the Semantic Web. Department of Computer Science, University of California, Santa Barbara, U.S.A.
6. \*Dara-Abrams, D. (2011): The World in the Head: Measuring People's Spatial Knowledge and Travel Patterns Using Mobile Devices. Department of Geography, University of California, Santa Barbara, U.S.A.
7. Pultar, E. (2011): The Role of Geography in Social Networks: CouchSurfing as a Case Study. Department of Geography, University of California, Santa Barbara, U.S.A.
8. Kessler, C. (2010): Context-Aware Semantics-Based Information Retrieval. Institute for Geoinformatics, University of Münster, Germany.
9. \*Janowicz, K. (2008): Computing Semantic Similarity among Geographic Feature Types Represented in Expressive Description Logics. Institute for Geoinformatics, University of Münster, Germany.

#### **Ph.D. committee member**

1. Crease, P. (in progress): Representation of Geographic Relevance in Mobile Applications. Department of Geography, University of Zürich, Switzerland.
2. Xiao, D. (in progress): Verbal Descriptions of Space: Cognition and Individual Characteristics. Department of Geography, University of California, Santa Barbara, U.S.A.
3. Simons, N. (in progress): Improving Emergency Management Operations Response to Wildland Fire Events. Department of Geography, State University of San Diego & Department of Geography, University of California, Santa Barbara, U.S.A.
4. Deutsch, K. (in progress): Where Are People Going? Investigating The Role of Dynamic Decision Making, Social Influences and Place Attitudes on Destination Choice. Department of Geography, University of California, Santa Barbara, U.S.A.
5. Swobodzinski, M. (in progress): Influence of spatial knowledge on stakeholders decision-making behavior in PPGIS. Department of Geography, State University of San Diego & Department of Geography, University of California, Santa Barbara, U.S.A.
6. Kritzler, M. (2011): Spatio-Temporal Data Analysis Framework for Moving Entities based upon Heterogeneous Tracking Systems. Institute for Geoinformatics, University of Münster, Germany.

7. Henson, K. (2011): Travel Determinants and Multi-scale Transferability of National Activity Patterns to Local Populations. Department of Geography, University of California, Santa Barbara, U.S.A.
8. Grossner, K. (2010): Representing Historical Knowledge in Geographic Information Systems. Department of Geography, University of California, Santa Barbara, U.S.A.
9. Yoon, S. Y. (2010): Impact of time-space prism accessibility on time use behavior and its propagation through intra-household interaction. Department of Geography, University of California, Santa Barbara, U.S.A.
10. Pingel, T. (2010): Strategic Elements of Route Choice. Department of Geography, University of California, Santa Barbara, U.S.A.
11. Schwering, A. (2006): Semantic Similarity Measurement including Spatial Relations for Semantic Information Retrieval of Geo-Spatial Data. Institute for Geoinformatics, University of Münster, Germany.
12. Steinicke, F. (2006): Multimodal Metaphors for Generic Interaction Tasks in Virtual Environments. Department of Computer Science, University of Münster, Germany.
13. Einspanier, U. (2006): Formal Metamodeling for the Specification and Implementation of Feature Catalogues. Institute for Geoinformatics, University of Münster, Germany.

**Master theses supervised (\*: co-supervised)**

1. Leu, E. (2012): Integration of travel information in a calendar application. Institute of Cartography and Geoinformation, ETH Zurich.
2. Wosniok, C. (2010): A Context-Aware Surf Spot Search Engine Based on Conceptual Spaces. Institute for Geoinformatics, University of Münster, Germany. In cooperation with Department of Geography, University of California, Santa Barbara.
3. \*McDaniel, M. (2010): Agent-Based Modeling of Lost Person Wayfinding. Department of Geography, University of California, Santa Barbara.
4. Wilkes, M. (2008): A graph-based alignment approach to context-sensitive similarity between climbing routes. Institute for Geoinformatics, University of Münster, Germany. In cooperation with Department of Geography, University of California, Santa Barbara.
5. \*Hecht, B. (2007): Utilizing Wikipedia as a Spatiotemporal Knowledge Repository. Department of Geography, University of California, Santa Barbara.
6. Espeter, M. (2007): Location-based decision support for user groups. Institute for Geoinformatics, University of Münster, Germany. In cooperation with Department of Geography, University of California, Santa Barbara.
7. Panov, I. (2007): A Formal Model for Mobile Map Adaptation in Pedestrian Navigation. Institute for Geoinformatics, University of Münster, Germany. In cooperation with Department of Geography, University of California, Santa Barbara.
8. \*Schöning, J. (2007): Interaction of mobile devices with public paper maps. Institute for Geoinformatics, University of Münster, Germany. In cooperation with Department of Geography, University of California, Santa Barbara.
9. Tessmann, S. (2006): Time geography for efficient shared-ride trip planning in transportation networks. Institute for Geoinformatics, University of Münster, Germany.

10. Debold, T. (2006): Optimierung nutzerspezifischer Aufgabenabläufe mit Location Based Services (Optimization of user-specific task processes with Location Based Services). Institute for Geoinformatics, University of Münster, Germany.
11. Kritzler, M. (2006): RFID-Ortungs- und Bewegungsanalyse von transgenen Mäusen zur Untersuchung der Alzheimer-Krankheit (Mousetracking with RFID in a transgenic animal model of Alzheimer's disease). Institute for Geoinformatics, University of Münster, Germany. In cooperation with Institute of Neuro and Behavioural Biology, University of Münster, Germany.
12. Swobodzinski, M. (2006): Route calculation constraints for an indoor navigation service for the blind. Institute for Geoinformatics, University of Münster, Germany.
13. Lautenschütz, A.-K. (2006): Spatial Relations – The influence of scale, context and spatial relation in linguistic topology. Institute for Geoinformatics, University of Münster, Germany. In cooperation with Ordnance Survey, U.K.
14. Wilmes, T. (2005): Technische Nutzbarkeitsanalyse von Triggered Location Services in zellulären Netzen (Technical usability analysis of Triggered Location Services in cellular networks). Institute for Geoinformatics, University of Münster, Germany.
15. Tomberge, P. (2005): Navigation mittels RFID - Navigationsmöglichkeiten durch RFID-Eintrittskarten bei der WM 2006 (Navigation with RFID – navigation solutions through RFID tickets at the 2006 FIFA World Cup in Germany). Institute for Geoinformatics, University of Münster, Germany.
16. Kessler, C. (2004): Design and implementation of argumentation maps. Institute for Geoinformatics, University of Münster, Germany. In cooperation with Department of Geography, University of Toronto, Canada.
17. \*Grüning, D. (2004): Ein Werkzeug zur automatischen Ontologie-Übertragung zwischen Haskell und UML (A tool for automatic ontology-transfer between Haskell and UML). Institute for Geoinformatics, University of Münster, Germany.
18. Redbrake, D. (2003): Ontology-driven wrappers for navigation services. Institute for Geoinformatics, University of Münster, Germany.

#### **Master's committee member**

1. Currier, K. (2011): Auditory Representation in Spatial Applications. Department of Geography, University of California, Santa Barbara, U.S.A.
2. Burte, H. (2011): Individual Differences in Spatial Knowledge Acquisition: The Interaction Between Sense of Direction and Attention While Learning Real-World Environments. Department of Geography, University of California, Santa Barbara.

#### **Ph.D. examiner**

1. Kiefer, P. (2011): The Mobile Intention Recognition Problem And An Approach Based On Spatially-Constrained Grammars. Faculty of Information Systems and Applied Computer Science. University of Bamberg, Germany.
2. Wang, Z. (2010): Proactive Traffic Control Strategies for Sensor-Enabled Cars. Department of Computer Science and Software Engineering. The University of Melbourne, Australia.

## Publications

### *Articles in Refereed Journals*

1. Y. Yuan, **M. Raubal**, and Y. Liu (in press) Correlating Mobile Phone Usage and Travel Behavior - A Case Study of Harbin, China. *Computers, Environment and Urban Systems*.
2. K. Janowicz, **M. Raubal**, and W. Kuhn (2011) The Semantics of Similarity in Geographic Information Retrieval. *Journal of Spatial Information Science* (2): 29-57.
3. **M. Raubal** and B. Adams (2010) The Semantic Web Needs More Cognition. *Semantic Web* 1(1-2): 69-74.
4. M. Espeter and **M. Raubal** (2009) Location-based decision support for user groups. *Journal of Location Based Services* 3(3): 165-187.
5. M. Swobodzinski and **M. Raubal** (2009) An Indoor Routing Algorithm for the Blind: Development and Comparison to a Routing Algorithm for the Sighted. *International Journal of Geographical Information Science* 23(10): 1315-1343.
6. E. Pultar, **M. Raubal**, T. Cova, and M. Goodchild (2009) Dynamic GIS Case Studies: Wildfire Evacuation and Volunteered Geographic Information. *Transactions in GIS* 13(s1): 85-104.
7. **M. Raubal** (2009) Cognitive Engineering for Geographic Information Science. *Geography Compass* 3(3): 1087-1104.
8. K. Janowicz, **M. Raubal**, A. Schwering, and W. Kuhn (2008) Semantic Similarity Measurement and Geospatial Applications (Editorial). *Transactions in GIS* 12(6): 651-659.
9. **M. Raubal**, S. Winter, S. Teßmann, and C. Gaisbauer (2007) Time geography for ad-hoc shared-ride trip planning in mobile geosensor networks. *ISPRS Journal of Photogrammetry and Remote Sensing*. 62(5): 366-381.
10. M. Kritzler, **M. Raubal**, and A. Krüger (2007) A GIS framework for spatio-temporal analysis and visualization of laboratory mice tracking data. *Transactions in GIS*. 11(5): 765-782.
11. W. Kuhn, **M. Raubal**, and P. Gärdenfors (2007) Cognitive Semantics and Spatio-Temporal Ontologies (Editorial). *Spatial Cognition and Computation* 7(1): 3-12.
12. C. Rinner and **M. Raubal** (2004) Personalized Multi-Criteria Decision Strategies in Location-Based Decision Support. *Journal of Geographic Information Sciences* 10(2): 149-156.
13. **M. Raubal**, H. Miller, and S. Bridwell (2004) User-Centred Time Geography For Location-Based Services. *Geografiska Annaler B* 86(4): 245-265.
14. C. Nothegger, S. Winter, and **M. Raubal** (2004) Selection of Salient Features for Route Directions. *Spatial Cognition and Computation* 4(2): 113-136.
15. **M. Raubal** and W. Kuhn (2004) Ontology-Based Task Simulation. *Spatial Cognition and Computation* 4(1): 15-37.
16. **M. Raubal** (2001) Human wayfinding in unfamiliar buildings: a simulation with a cognizing agent. *Cognitive Processing* (2-3): 363-388.

17. A. Frank and **M. Raubal** (2001) GIS Education Today: From GI Science to GI Engineering. *Journal of the Urban and Regional Information Systems Association (URISA)* 13(2): 5-10.
18. **M. Raubal** (2001) Ontology and epistemology for agent-based wayfinding simulation. *International Journal of Geographical Information Science* 15(7): 653-665.
19. A. Frank and **M. Raubal** (1999) Formal Specifications of Image Schemata - A Step to Interoperability in Geographic Information Systems. *Spatial Cognition and Computation* 1(1): 67-101.
20. **M. Raubal** and M. Egenhofer (1998) Comparing the complexity of wayfinding tasks in built environments. *Environment & Planning B* 25(6): 895-913.
21. **M. Raubal**, B. Gaupmann, and W. Kuhn (1997) Teaching Raster GIS Operations with Spreadsheets. *Journal of Geography* 96(5): 258-263.

*Articles in Refereed Conference Proceedings*

1. P. Kiefer, F. Straub, and **M. Raubal** (2012) Towards Location-Aware Mobile Eye Tracking. in: *ETRA - Eye Tracking Research & Applications, 28-30 March 2012, Santa Barbara, CA, USA*, ACM.
2. G. McKenzie and **M. Raubal** (2011) Adding Social Constraints to Location Based Services. Extended Abstract. in: *8th Symposium on Location-Based Services, Vienna, Austria*.
3. Y. Yuan and **M. Raubal** (2011) Extracting clustered urban mobility and activities from georeferenced mobile phone datasets. *ISPRS Workshop on Spatio-Temporal Data Mining and Analysis (STDM'11), July 18-19, 2011*. T. Cheng, P. Longley, C. Ellul, and A. Chow (Eds.). London, U.K., 21-23.
4. P. Kiefer, **M. Raubal**, and C. Schlieder (2010) Time Geography Inverted: Recognizing Intentions in Space and Time. in: A. El Abbadi, D. Agrawal, M. Mokbel, and P. Zhang (Eds.), *18th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2010), San Jose, California, USA*, pp. 510-513.
5. K.-F. Richter, D. Dara-Abrams, and **M. Raubal** (2010) Navigating and Learning with Location Based Services: A User-Centric Design. *7th International Symposium on LBS & TeleCartography*. G. Gartner and Y. Li. (Eds.). Guangzhou, China, pp. 261-276.
6. K. Janowicz, B. Adams, and **M. Raubal** (2010) Semantic Referencing - Determining Context Weights for Similarity Measurement. in: S. Fabrikant, T. Reichenbacher, M. van Kreveld, and C. Schlieder (Eds.), *Geographic Information Science - Sixth International Conference, GIScience 2010, Zürich, Switzerland, Sep. 14-17 2010, Proceedings*. Lecture Notes in Computer Science 6292, pp. 70-84, Springer, Berlin.
7. E. Pultar, S. Winter, and **M. Raubal** (2010) Location-Based Social Network Capital. *Geographic Information Science - 6th International Conference, GIScience 2010, Extended Abstracts Volume*. R. Purves and R. Weibel (Eds.). Zurich, Switzerland.
8. B. Adams, L. Li, **M. Raubal**, and M. Goodchild (2010) A General Framework for Conflation. *Geographic Information Science - 6th International Conference, GIScience 2010, Extended Abstracts Volume*. R. Purves and R. Weibel (Eds.). Zurich, Switzerland.
9. Y. Yuan and **M. Raubal** (2010) On Correlation between Mobile Phone Usage and Travel Behavior – A Case Study of Harbin, China. *Geographic Information Science - 6th*

- International Conference, GIScience 2010, Extended Abstracts Volume*. R. Purves and R. Weibel (Eds.). Zurich, Switzerland.
10. Y. Yuan and **M. Raubal** (2010) Spatio-temporal knowledge discovery from georeferenced mobile phone data. in: B. Gottfried, P. Laube, A. Klippel, N. Van de Weghe, and R. Billen (Eds.), *Proceedings of the 1st Workshop on Movement Pattern Analysis, MPA'10, Zurich, Switzerland, September 14, 2010*. CEUR Workshop Proceedings 652, pp. 121-126, CEUR-WS.org.
  11. **M. Raubal** and S. Winter (2010) A Spatio-Temporal Model Towards Ad-Hoc Collaborative Decision-Making. in: M. Painho, M. Santos, and H. Pundt (Eds.), *Geospatial Thinking*. Lecture Notes in Geoinformation and Cartography pp. 279-297, Springer, Berlin, Heidelberg.
  12. E. Pultar and **M. Raubal** (2009) A case for space: physical and virtual location requirements in the CouchSurfing social network. in: *2009 ACM International Workshop on Location Based Social Networks (LBSN'09), Seattle, WA, USA*, pp. 88-91, ACM.
  13. **M. Raubal**, S. Winter, and C. Dorr (2009) Decentralized Time Geography for Ad-Hoc Collaborative Planning. in: K. Stewart Hornsby, C. Claramunt, M. Denis, and G. Ligozat (Eds.), *Spatial Information Theory - 9th International Conference, COSIT 2009, Aber Wrac'h, France, September 2009*. Lecture Notes in Computer Science 5756, pp. 436-452, Springer, Berlin.
  14. B. Adams and **M. Raubal** (2009) A Metric Conceptual Space Algebra. in: K. Stewart Hornsby, C. Claramunt, M. Denis, and G. Ligozat (Eds.), *Spatial Information Theory - 9th International Conference, COSIT 2009, Aber Wrac'h, France, September 2009*. Lecture Notes in Computer Science 5756, pp. 51-68, Springer, Berlin.
  15. B. Adams and **M. Raubal** (2009) The Conceptual Space Markup Language (CSML): Towards the Cognitive Semantic Web. in: *Third IEEE International Conference on Semantic Computing (ICSC 2009), Berkeley, California*. IEEE.
  16. C. Keßler, **M. Raubal**, and C. Wosniok (2009) Semantic Rules for Context-Aware Geographical Information Retrieval. in: P. Barnaghi, K. Moessner, M. Presser, and S. Meissner (Eds.), *Smart Sensing and Context - 4th European Conference, EuroSSC 2009, Guildford, UK, September 16-18, 2009*. Lecture Notes in Computer Science 5741, pp. 77-92, Springer, Berlin, Heidelberg.
  17. **M. Raubal** and I. Panov (2009) A Formal Model for Mobile Map Adaptation. in: G. Gartner and K. Rehr (Eds.), *Location Based Services and TeleCartography II - From Sensor Fusion to Context Models. Selected Papers from the 5th International Symposium on LBS & TeleCartography 2008, Salzburg, Austria*. Lecture Notes in Geoinformation and Cartography pp. 11-34, Springer, Berlin.
  18. E. Pultar, **M. Raubal**, and M. Goodchild (2008) GEDMWA: Geospatial Exploratory Data Mining Web Agent. in: W. Aref, M. Mokbel, H. Samet, M. Schneider, C. Shahabi, and O. Wolfson (Eds.), *16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2008), Irvine, CA, USA*, pp. 499-502.
  19. **M. Raubal** (2008) Representing concepts in time. in: C. Freksa, N. Newcombe, P. Gärdenfors, and S. Wöfl (Eds.), *Spatial Cognition VI - Learning, Reasoning, and Talking about Space. Proceedings of the International Conference Spatial Cognition 2008, Freiburg, Germany*. Lecture Notes in Artificial Intelligence 5248, pp. 328-343, Springer, Berlin.

20. **M. Raubal** (2008) Cognitive modeling with conceptual spaces. in: M. Ragni, H. Schultheis, and T. Barkowsky (Eds.), *Workshop on Cognitive Models of Human Spatial Reasoning, Freiburg, Germany*, pp. 7-11.
21. B. Hecht and **M. Raubal** (2008) GeoSR: Geographically Explore Semantic Relations in World Knowledge. in: L. Bernard, C. Friis-Christensen, and H. Pundt (Eds.), *The European Information Society - Taking Geoinformation Science One Step Further* (Proceedings of the 11th AGILE International Conference on GIScience 2008, Girona, Spain). Lecture Notes in Geoinformation and Cartography, pp. 95-113, Springer, Berlin.
22. J. Schöning, B. Hecht, **M. Raubal**, A. Krüger, M. Marsh, and M. Rohs (2008) Improving Interaction with Virtual Globes through Spatial Thinking: Helping Users Ask "Why?" in: Proceedings of the 13th International Conference on Intelligent User Interfaces (IUI 2008), Gran Canaria, Spain. pp. 129-138, ACM Press, New York.
23. C. Keßler, **M. Raubal**, and K. Janowicz (2007) The Effect of Context on Semantic Similarity Measurement. in: R. Meersman, Z. Tari, and P. Herrero (Eds.), *On The Move - OTM 2007 Workshops, Part II - 3rd International IFIP Workshop On Semantic Web & Web Semantics (SWWS '07), Vilamoura, Algarve, Portugal*. Lecture Notes in Computer Science 4806, pp. 1274-1284, Springer, Berlin.
24. M. Rohs, J. Schöning, **M. Raubal**, G. Essl, and A. Krüger (2007) Map Navigation with Mobile Devices: Virtual versus Physical Movement with and without Visual Context. in: *Proceedings of the Ninth International Conference on Multimodal Interfaces (ICMI 2007), 12-15 November 2007, Nagoya, Japan*. pp. 146-153, ACM Press.
25. K. Janowicz and **M. Raubal** (2007) Affordance-Based Similarity Measurement for Entity Types. in: S. Winter, M. Duckham, L. Kulik, and B. Kuipers (Eds.), *Spatial Information Theory - 8th International Conference, COSIT 2007, Melbourne, Australia, September 2007*. Lecture Notes in Computer Science 4736, pp. 133-151, Springer, Berlin.
26. B. Bäumer, I. Panov, and **M. Raubal** (2007) Decision Improvement through Multi-Criteria Strategies in Mobile Location-Based Services. in: A. Car, G. Griesebner, and J. Strobl (Eds.), *Geospatial Crossroads @ GI\_Forum: Proceedings of the First Geoinformatics Forum Salzburg*. pp. 17-25, Wichmann, Heidelberg.
27. A.-K. Lautenschütz, C. Davies, **M. Raubal**, A. Schwering, and E. Pederson (2007) The Influence of Scale, Context and Spatial Preposition in Linguistic Topology. in: T. Barkowsky, M. Knauff, G. Ligozat, and D. Montello (Eds.), *Spatial Cognition V - Reasoning, Action, Interaction. International Conference Spatial Cognition 2006, Bremen, Germany, September 24-28, 2006, Revised Selected Papers*. Lecture Notes in Artificial Intelligence 4387, pp. 439-452, Springer, Berlin.
28. S. Winter and **M. Raubal** (2006) Time Geography for Ad-Hoc Shared-Ride Trip Planning. in: K. Aberer, T. Hara, and A. Joshi (Eds.), *7th International Conference on Mobile Data Management (MDM'06), Nara, Japan*. IEEE.
29. M. Kritzler, L. Lewejohann, A. Krüger, **M. Raubal**, and N. Sachser (2006) An RFID-based Tracking System for Laboratory Mice in a Semi-Natural Environment. in: A. Schmidt, S. Spiekermann, A. Gershman, and F. Michahelles (Eds.), *PTA2006 Workshop, PERSVASIVE - Pervasive Technology Applied Real-World Experiences with RFID and Sensor Networks, Dublin, Ireland*.
30. A. Schwering and **M. Raubal** (2005) Measuring Semantic Similarity between Geospatial Conceptual Regions. in: A. Rodriguez, I. Cruz, M. Egenhofer, and S. Levashkin (Eds.),

- GeoSpatial Semantics - First International Conference, GeoS 2005, Mexico City, Mexico, November 2005*. Lecture Notes in Computer Science 3799, pp. 90-106, Springer, Berlin.
31. A. Schwering and **M. Raubal** (2005) Spatial Relations for Semantic Similarity Measurement. in: J. Akoka, S. Liddle, I.-Y. Song, M. Bertolotto, I. Comyn-Wattiau, W.-J. vanden Heuvel, M. Kolp, J. Trujillo, C. Kop, and H. Mayr (Eds.), *Perspectives in Conceptual Modeling: ER 2005 Workshops CAOIS, BP-UML, CoMoGIS, eCOMO, and QoIS, Klagenfurt, Austria, October 24-28, 2005*. Lecture Notes in Computer Science 3770, pp. 259-269, Springer, Berlin.
  32. C. Rinner, **M. Raubal**, and B. Spigel (2005) User Interface Design for Location-Based Decision Services. in: *13th International Conference on GeoInformatics, 17-19 August 2005, Proceedings (CD-ROM)*, Toronto, Canada.
  33. T. Wilmes and **M. Raubal** (2005) Technische Nutzbarkeitsanalyse von Triggered Location Services. in: J. Strobl, T. Blaschke, and G. Griesebner (Eds.), *Angewandte Geoinformatik 2005 - Beiträge zum 17. AGIT-Symposium Salzburg*. pp. 780-789, Wichmann, Heidelberg.
  34. C. Kessler, M. Wilde, and **M. Raubal** (2005) Using SDI-based Public Participation for Conflict Resolution. in: *11th EC-GI & GIS Workshop, ESDI: Setting the Framework*, Alghero, Sardinia, 29th June - 1st July 2005.
  35. **M. Raubal** (2005) Mappings For Cognitive Semantic Interoperability. in: F. Toppen and M. Painho (Eds.), *AGILE 2005 - 8th Conference on Geographic Information Science*. pp. 291-296, Instituto Geografico Portugues (IGP), Lisboa, Portugal.
  36. C. Kessler, C. Rinner, and **M. Raubal** (2005) An Argumentation Map Prototype to Support Decision-Making in Spatial Planning. in: F. Toppen and M. Painho (Eds.), *AGILE 2005 - 8th Conference on Geographic Information Science*. pp. 135-142, Instituto Geografico Portugues (IGP), Lisboa, Portugal.
  37. **M. Raubal** (2004) Formalizing Conceptual Spaces. in: A. Varzi and L. Vieu (Eds.), *Formal Ontology in Information Systems, Proceedings of the Third International Conference (FOIS 2004)*. *Frontiers in Artificial Intelligence and Applications* 114, pp. 153-164, IOS Press, Amsterdam, NL.
  38. **M. Raubal** and C. Rinner (2004) Multi-Criteria Decision Analysis for Location Based Services. in: S. A. Brandt (Ed.), *Geoinformatics 2004, 12th International Conference on Geoinformatics, 7-9 June, 2004, Gävle, Sweden*, pp. 47-53.
  39. D. Redbrake and **M. Raubal** (2004) Ontology-Driven Wrappers for Navigation Services. in: F. Toppen and P. Prastacos (Eds.), *AGILE 2004, 7th Conference on Geographic Information Science, April 29th - May 1st, Heraklion, Greece*, pp. 195-205.
  40. W. Kuhn and **M. Raubal** (2003) Implementing Semantic Reference Systems. in: M. Gould, R. Laurini, and S. Coulondre (Eds.), *AGILE 2003 - 6th AGILE Conference on Geographic Information Science, Lyon, France*, pp. 63-72.
  41. **M. Raubal** and S. Winter (2002) Enriching Wayfinding Instructions with Local Landmarks. in: M. Egenhofer and D. Mark (Eds.), *Geographic Information Science - Second International Conference, GIScience 2002, Boulder, CO, USA, September 2002*. *Lecture Notes in Computer Science* 2478, pp. 243-259, Springer, Berlin.
  42. H. Hochmair and **M. Raubal** (2002) Topologic and Metric Decision Criteria for Wayfinding in the Real World and the WWW. in: *Int. Symposium on Spatial Data Handling, SDH'02, Ottawa, Canada*.

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44. A. Frank and **M. Raubal** (2000) Formal Specifications of Image Schemata for Interoperability in Geographic Information Systems. Spatial Cognition - Foundations and Applications (Selected Papers from Mind III, Annual Conference of the Cognitive Science Society of Ireland, 1998). S. Nuallain. Amsterdam/Philadelphia, John Benjamins B. V. 26: 213-232.
45. **M. Raubal** and M. Worboys (1999) A Formal Model of the Process of Wayfinding in Built Environments. in: C. Freksa and D. Mark (Eds.), *Spatial Information Theory - Cognitive and Computational Foundations of Geographic Information Science, International Conference COSIT '99*, Stade, Germany, pp. 381-399.
46. T. Jordan, **M. Raubal**, B. Gartrell, and M. Egenhofer (1998) An Affordance-Based Model of Place in GIS. in: T. Poiker and N. Chrisman (Eds.), *8th Int. Symposium on Spatial Data Handling, SDH'98*, Vancouver, Canada, pp. 98-109.
47. A. Frank and **M. Raubal** (1998) Specifications for Interoperability: Formalizing Image Schemata for Geographic Space. in: T. Poiker and N. Chrisman (Eds.), *8th Int. Symposium on Spatial Data Handling, SDH'98*, Vancouver, Canada, pp. 331-348.
48. **M. Raubal**, M. Egenhofer, D. Pfoser, and N. Tryfona (1997) Structuring Space with Image Schemata: Wayfinding in Airports as a Case Study. in: S. Hirtle and A. Frank (Eds.), *Spatial Information Theory—A Theoretical Basis for GIS, International Conference COSIT '97, Laurel Highlands, PA. Lecture Notes in Computer Science 1329*, pp. 85-102, Springer-Verlag, Berlin.
49. S. Timpf, **M. Raubal**, and W. Kuhn (1996) Experiences with Metadata. in: *7th Int. Symposium on Spatial Data Handling, SDH'96*, Delft, The Netherlands (August 12-16, 1996), pp. 12B.31 - 12B.43.

#### *Reviewed Book Sections*

1. D. Montello and **M. Raubal** (in press) Functions and applications of spatial cognition. in: D. Waller and L. Nadel (Eds.), *The APA handbook of spatial cognition*. American Psychological Association, Washington, DC.
2. **M. Raubal** (2011) Cogito ergo mobilis sum: The impact of Location-Based Services on our mobile lives. in: T. Nyerges, H. Couclelis, and R. McMaster (Eds.), *The SAGE Handbook of GIS and Society*. pp. 159-173, Sage Publications, Los Angeles, London.
3. **M. Raubal** (2010) Location-based decision support. in: D. Blumel (Ed.), *McGraw-Hill Yearbook of Science & Technology 2010*. pp. 216-218, McGraw-Hill Professional, New York.
4. **M. Raubal** (2010) Spatial Cognitive Engineering. in: B. Warf (Ed.), *Encyclopedia of Geography*. SAGE.
5. E. Pultar and **M. Raubal** (2009) Progressive Tourism: Integrating Social, Transportation, and Data Networks. in: N. Sharda (Ed.), *Tourism Informatics: Visual Travel Recommender Systems, Social Communities, and User Interface Design*. pp. 145-159, IGI Global, Hershey, PA.

6. **M. Raubal** (2008) Wayfinding: Affordances and Agent Simulation. in: S. Shekhar and H. Xiong (Eds.), *Encyclopedia of GIS*. pp. 1243-1246, Springer, New York.
7. **M. Raubal** and R. Moratz (2008) A functional model for affordance-based agents. in: E. Rome, J. Hertzberg, and G. Dorffner (Eds.), *Towards Affordance-Based Robot Control - International Seminar, Dagstuhl Castle, Germany, June 5-9, 2006. Revised Papers*. Lecture Notes in Computer Science 4760, pp. 91-105, Springer, Berlin.
8. P. Tomberge and **M. Raubal** (2006) Navigation mittels RFID - Untersuchung der Navigationsmöglichkeiten durch RFID-Eintrittskarten bei der Fussball-WM 2006. in: J. Strobl and C. Roth (Eds.), *GIS und Sicherheitsmanagement*. pp. 91-100, Wichmann, Heidelberg.
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#### *Articles in Non-Refereed Journals & Magazines*

1. J. Schöning, O. Paczkowski, I. Panov, C. Keßler, K. Janowicz, J. Müller, **M. Raubal**, and A. Krüger (2007) Alpines Klettern im Jahre 2017. *Alpin Magazin*. 03/07.
2. **M. Raubal** (2006) Location-Based Decision Services - eine neuartige Form mobiler räumlicher Entscheidungsunterstützung. *VGI - Vermessung & Geoinformation* 94(1+2): 30-37.
3. **M. Raubal** (2006) Menschlich denkende Navigationssysteme. *Conrad* (1/2006): 24-27.
4. S. Winter, E. Pontikakis, and **M. Raubal** (2001) LBS for Real-Time Navigation - A Scenario. *GeoInformatics*. 4: 6-9.
5. **M. Raubal** (1997) Geoinformation im Internet: Die Homepage der Abteilung Geoinformation an der TU Wien. *Zeitschrift fuer Vermessungswesen* 122(2): 86-90.

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