Robert I. Najlis

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QUALIFICATION HIGHLIGHTS:

Programming: Java, Ruby (Ruby on Rails), C/C++, XML, UML, SQL,
Object-Oriented and Aspect-Oriented Programming, Perl, HTML,
Visual Basic, JavaScript, AspectJ, Scheme, Avenue
Relational Databases, Geographic Information Systems
Agent-Based Modeling/Multi-Agent System Programming
Artificial Intelligence Techniques: case-based reasoning, genetic algorithms, neural networks

Languages Spoken: Engish (native), Spanish, Chinese (Mandarin)

Experience:

2007 **Modeler/Programmer** University of Michigan (telecommute)
Agent based modeling development and testing

2007 **Web Programmer** Igicom, New York, NY
Web development, Ruby on Rails

2006-2007 **Simetric** Arlington, Virginia (telecommute)
Modeler/Software Engineer
- Developed an Agent-Based Model with GIS data using Java and RePast,
- Developed Scale-free network algorithms

2003-2006 **Argonne National Laboratory** Argonne, IL (telecommute)
Argonne National Laboratory is a U.S. Department of Energy science
and engineering research laboratory managed by The University of Chicago
- Java programming, developed and used open source projects
- Agent-BasedModeling-GIS Integration, Lead Developer
- Toolkits used include RePast, OpenMap, Java Topology Suite, Colt (High Performance Scientific and Technical Computing) and ESRI ArcGIS

2004 –2006 **Modeler/Programmer** UCLA (telecommute)
Research Project at UCLA
Java Development of a GIS agent-based model
- National Science Foundation Grant, ``Neighborhood Choice and Neighborhood Change: Evaluating Dynamic Models of Residential Segregation."
(with E. Bruch, R. Mare and R. Berk)

2002, 2006 **Modeler/Programmer** George Mason University (telecommute)
Research Project
Java Development of a GIS agent-based model
- Model of effects of spatial externalities on land-use resources, using raster and vector GIS data
Integrates Agent-Based Modeling and GIS
Utilizes Open Source Toolkits: Repast, JUMP, and JavaTopology Suite

2003 **Center forDevelopment Research (ZEF)** Bonn, Germany (telecommute)

- Technical Report laying out software and hardware foundations of GLOWA Volta Project; an Agent-Based and GIS model analyzing the physical and socio-economic determinants of the hydrological cycle in Ghana, with Thomas Berger

1998–2002 **Indiana University** Bloomington, IN

Research Assistant, Center for the Study of Institutions, Population, and Environmental Change (CIPEC), Elinor Ostrom supervisor

Java development of GIS agent-based models

- Agent-Based economic model of spatial externalities, in Java and RePast,
- Agent-Based network model written in Java and RePast

Formal Concept Analysis, Aspect-Oriented Programming, and International Development, Master's thesis with Uta Priss

Java object-oriented design, AspectJ aspect-oriented design

- Object-oriented and aspect-oriented design and programming techniques
- Techniques for multi-faceted analysis of international water resource data

Concept Based Human Computer Interaction, independent study with Katy Börner

3D models in a virtual reality environment, using artificial intelligence techniques

Resulting Publications:

- Katy Börner, 2000. "VegoWelt: A smart virtual playroom." *International Journal of Design Computing*, 2. <http://www.arch.usyd.EDU.AU/kcdc/journal/vol2/dcnet/sub6/>
- Katy Börner, 1999. "Welcome to VegoWelt." *Ylem Newsletter: "Facing Reality"*, 8 (19), p. 12, July/August. <http://www.ylem.org/NewSite/archive/1999.html>

Assistant Instructor, Computer Science Department

Teaching classes and developing curriculum on Programming and Internet technologies

Cognitive Science Summer Workshop, with Michael Gasser

Java programming, artificial intelligence techniques

- Developed Java based Artificial Life simulation project involving simulation of an artificial world, using reinforcement learning
- Assisted in teaching undergraduate students cognitive science and artificial life principles in a summer workshop, as seen through Artificial Life simulation.

2001 **Information Retrieval Research, joint research with Massoud Moussavi**

Ruby programming, information retrieval

- Researched techniques and technologies for indexing and searching the World Bank's knowledge base, using case-based reasoning and latent semantic indexing

2000 **Java Client-Server Project, for William Hetrick**

Java Client/Server programming

- Developed Java applet and servlet for running an online psychology experiment

1996–1998 **Hong Kong and Shanghai Banking Corporation** New York, NY

SQL, Powerbuilder, Sybase development

- Developed Target Investor Database using PowerBuilder and Sybase; deployed across company intranet using client/server architecture.
- Designed and implemented relational databases for various departments.

Education:

Ph.D Studies in Public Policy, Indiana University, 2001-2003
Master's of Science, Computer Science, Indiana University, 2001
Bachelor of Arts, Comparative Scientific Traditions, Hampshire College, 1992

Publications:

Robert Najlis and Michael North, 2005. "Repast Vector GIS integration" North American Association for Computational Social and Organization Science, South Bend, IN June 26-28

Robert Najlis and Michael North, 2004. "Repast For GIS" The Agent 2004 Conference on: Social Dynamics: Interaction, Reflexivity, and Emergence, Chicago, Ill, Oct 7-9.

Michael. North, N. Collier, J.R. Vos, R. Najlis, and W. Maciorowski, 2004. "The Repast Revolution: An Overview of New Repast Developments" The Agent 2004 Conference on: Social Dynamics: Interaction, Reflexivity, and Emergence, Chicago, Ill, Oct 7-9.

Parker, Dawn C., and Robert Najlis. 2003. *Using Multi-Agent System Models to Link Spatial Externalities and Landscape Fragmentation: A `Pseudo-Inductive' Analysis*. Presented at the international conference "Framing Land Use Dynamics: Integrating Knowledge on Spatial Dynamics in Socio-Economic and Environmental Systems for Spatial Planning in Western Urbanized Countries," Utrecht University, The Netherlands, April 16-18.

Najlis, Robert, Marco Janssen, and Dawn Parker, 2002. "Software Tools and Communication Issues." In: *Meeting the Challenge of Complexity: Proceedings of the Special Workshop on Agent-Based Models of Land-Use/Land-Cover Change*, eds. Dawn C. Parker, Thomas Berger, and Steven M. Manson. CIPEC Collaborative Report No. 3. Bloomington: Center for the Study of Institutions, Population, and Environmental Change, Indiana University; Santa Barbara: Center for Spatially Integrated Social Science, University of California. Available online at: <http://www.csiss.org/maslucc/ABM-LUCC.htm#_Toc24263596> or <http://www.csiss.org/maslucc/ABM-LUCC.pdf>
Available in a condensed form as:
Thomas Berger, Michael Goodchild, Marco A. Janssen, Steven M. Manson, Robert Najlis, and Dawn C. Parker, 2002. "Methodological Considerations For Agent-Based Modeling of Land-Use and Land-Cover Change." In: *Agent-Based Models of Land-Use/Land-Cover Change: Report and Review of an International Workshop, October 4-7, 2001, Irvine, California USA*. Dawn C. Parker, Thomas Berger, and Steven M. Manson, eds. LUCC Report Series, No. 6. Bloomington, Ind.: Focus 1 Office of the International Geosphere-Biosphere Programme and the International Human Dimensions Programme on Global Environmental Change, Indiana University. Available online at: <http://www.indiana.edu/~act/focus1/FinalABM11.7.02.pdf>

Massoud Moussavi and Robert Najlis, 2001. "Assessing the Effectiveness of LSI in Approaching the Intention of a User's Query," in *Proceedings: 14th Annual International Florida Artificial Intelligence Research Symposium, FLAIRS-2001*, Key West, Florida, May 21-23.