

Nathalie Henry

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Research Interests

I conduct my research in the general field of human-computer interaction, with a primary interest in information visualization. My dissertation research deals with the visual exploration of large social networks, bridging graph theory, social network analysis, information visualization and human-computer interaction. I aim at designing, implementing and evaluating novel interactive visualization techniques.

I am currently enrolled in joint PhD in Computer Science in France and in Australia. My co-advisors are Pr. Jean-Daniel Fekete (INRIA, France) and Pr. Peter Eades (University of Sydney, Australia). I started my Ph.D. research in october 2004 and plan to submit the dissertation in april 2008 to graduate in july 2008.

Awards and grants

Brian Shackel award (Best paper award) at Interact'07, 2007

INRIA-Microsoft Research, 7 month position, 2008
French government Ph.D. grant: \$70,000 over 3 years, 2004-2007
French government international internship (USA) grant: \$700, 2003
French government international internship (UK) grant: \$700, 2001

Education

- 2004-2008 **Cotutelle Ph.D. (double doctoral degree scheme) in Computer Science**
started october 2004, expected july 2008
Proposed title: Exploring large social networks with matrix-based representations
Co-advised by Pr. Jean-Daniel Fekete and Pr. Peter Eades
INRIA & University of Paris-Sud
University of Sydney
- 2003-2004 **Research Master in Computer Science**
Document, Images and Communicating Information Systems
University of Lyon1, National Institute of Applied Science (INSA), Lyon, France
- 2001-2004 **Engineering Diploma in Computer Science**
National Institute of Applied Science (INSA), Lyon, France
- 1999-2001 **Bachelor Degree in Computer Science (DUT)**
University Institute of Technology, University of Paris-Sud, France
- 1998-1999 **First year in Computer Science (University Studies Diploma : DEUG)**
University of Paris-Sud, France
- 1998 **High School Diploma in Science**
Sens, France

Past projects and Internships

- 2005-2006 **Scientific Research Communication on Graphs Visualization**
This project aimed at communicating research to children through workshops and the design of an interactive device for the Interactive Museum in Technology and Science of Paris
Palais de la découverte Paris, France
- 2004 **Realistic Aging of 3D Natural Scenes**
Research Master Internship in Computer Graphics
Alteration of synthetic forests and realistic modelization of natural environments
University of Lyon1, France
- 2003 **Living Pictures : Making a pictures population evolve.**
Computer Science Engineering Project
Bio-inspired Computer Science, Artificial Intelligence, Genetic Algorithms
<http://prisma.insa-lyon.fr/~livingpics>
National Institute of Applied Science, Lyon, France
- 2003 **Visual Langage Programmation**
Second year Engineering Internship
Introduction to research in Information Visualization, Visual Languages and Computer Graphics.
Java3D and Neural Networks modules development integrated in JbeanStudio
<http://jbeanstudio.sourceforge.net>
University of Sydney, Australia
- 2002 **Automatic Web Site Generation**
First year Engineering Internship
Java DOM, XML and Enhydra server
<http://www.buildyourcommunity.com>
Leader Of The Dot Inc., Baltimore, MD, USA
- 2001 **Design and Programmation of a Dynamic Web Site Section**
Degree Internship
Analysis and Design using UML, Programmation using Php-MySQL
<http://soc.napier.edu.uk>
Napier University, Edinburgh, Scotland

Peer-reviewed Journal Publications

- 2007 **20 years of 4 HCI conference: a visual exploration**
Nathalie Henry, Howard Goodell, Niklas Elmqvist and Jean-Daniel Fekete
In International Journal of Human-Computer Interface – Special issue in honor of Ben Shneiderman's 60th birthday: Reflections on Human-Computer Interaction, 23(3), pp239-285, December 2007.
- NodeTrix : Hybrid Representation for Analyzing Social Networks**
Nathalie Henry, Jean-Daniel Fekete and Michael McGuffin
In IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE InfoVis'07), 13(6), pp 1302-1309, November 2007.
[Acceptance rate 23%]
- 2006 **MatrixExplorer : A Dual-Representation System to Explore Social Networks**
Nathalie Henry and Jean-Daniel Fekete
In IEEE Transactions on Visualization and Computer Graphics (Proceedings of IEEE InfoVis'06), 12(5), pp 677-684, October 2006.
[Acceptance rate 24%]

Peer-reviewed Conference Publications

- 2008 **Mélange: space folding for multi-focus interaction**
Niklas Elmqvist, Nathalie Henry, Yann Riche and Jean-Daniel Fekete
In *Proceedings of the ACM CHI 2008 Conference on Human Factors in Computing Systems*, ACM Press, 2008 to appear.
[Acceptance rate 22%]
- ZAME: interactive large-scale graph visualization.**
Niklas Elmqvist, Thanh-Ngni Do, Howard Goodell, Nathalie Henry and Jean-Daniel Fekete.
In *Proceedings of IEEE Pacific Visualization Symposium 2008*, IEEE Press, 2008 to appear.
- 2007 **MatLink : Enhanced Matrix Visualization for Analyzing Social Networks**
Nathalie Henry and Jean-Daniel Fekete
In *Proceedings of the 11th IFIP TC13 International Conference on Human-Computer Interaction (Interact'07)*, LNCS 4663, pp 288-302, Springer, Rio de Janeiro, Brazil, September 2007.
[Acceptance rate 33%]
Brian Shakel award (best paper award)
- 2006 **MatrixExplorer : Un systeme pour l'analyse des réseaux sociaux**
Nathalie Henry and Jean-Daniel Fekete
In *Proceedings of the 18th French Speaking Conference on Human Computer Interaction (IHM'06)*.
International Conference Proceedings Series, ACM Press, Montreal, Canada, April 2006.
[Acceptance rate 41%]

Peer-reviewed Workshop Publications

- 2007 **Visually exploring large social networks**
Nathalie Henry
In *Proceedings of the 11th IFIP TC13 International Conference on Human-Computer Interaction (Interact'07)*, LNCS 4663, pp 604-610, Rio de Janeiro, Brazil, September 2007.
Doctoral consortium paper
- 2006 **Evaluating Visual Table Data Understanding**
Nathalie Henry and Jean-Daniel Fekete
In *Proceedings of BEyond time and errors: novel evaluation methods for Information Visualization*, AVI'06 Workshop, ACM Press, Venice, Italy, May 2006.
- Task Taxonomy for Graph Visualization**
Catherine Plaisant, Bongshin Lee, Cynthia Sims Parr, Jean-Daniel Fekete and Nathalie Henry
In *Proceedings of BEyond time and errors: novel evaluation methods for Information Visualization*, AVI'06 Workshop, ACM Press, Venice, Italy, May 2006.

Other Publications

- 2007 **Navigating Wikipedia with the Zoomable Adjacency Matrix Explorer**
Jean-Daniel Fekete, Niklas Elmqvist, Thanh-Ngni Do, Howard Goodell and Nathalie Henry
INRIA Research Report (Paris), No.RR:00141168
- 2004 **Modélisation d'environnements naturels complexes: les forêts**
Nathalie Henry
Master thesis, advised by Dr. Eric Galin.
LIRIS/CNRS, University of Lyon 1, France

Research Activities

Conference Paper Reviewing

ACM CHI'08, Conference on Human Factors in Computing Systems
ACM CHI'08 workshop: BELIV'08
Eurographics'08
IEEE Infovis'07, Conference on Information Visualization
IEEE VAST'07, Symposium on Visual Analytics Science and Technology
ACM UIST'07, Symposium on User Interface Software and Technology
ACM CHI'07, Conference on Human Factors in Computing Systems
IEEE Infovis'06, Symposium on Information Visualization
AVI'06 workshop: BELIV'06

Journal Paper Reviewing

ACM Transactions on Computer-Human Interaction (TOCHI), 2008
International journal on Human-Computer Interaction (IJHCI), 2007

2007

Invited Demonstration: Interactive Visualization of Social Networks

Workshop on online social networks
<http://research.microsoft.com/~thomkar/osn.htm>
MSR Research, Cambridge, UK

20 years of UIST collaboration: a poster

Displayed during UIST'07 for UIST's 20th birthday

Participation to the Interact'07 doctoral consortium

Rio de Janeiro, Brazil

Invited Talk: Visually Exploring Social Networks

Seminar during a research lab. visit
UFRGS, Porto Alegre, Brazil

Invited Talk: Exploring Social Networks using Matrices

Seminar during a research lab. visit
MSR Research, Seattle, WA, USA

Invited Talk: Exploring Social Networks using Matrix-Based Representations

Social Networks Analysis Workshop: Helping Users Make Sense of Social Networks
<http://www.cs.umd.edu/hcil/sna-workshop>
HCIL, University of Maryland, MD, USA

2006

Student volunteer at Vis/Infovis/VAST'06

Baltimore, MD, USA

Invited Talk: Exploratory Visualization of Networks

Seminar on Graphical Representations of Networks
University of Queensland, Brisbane, Australia

2005

Invited Talk: Exploratory Visualization of Graphs using Matrices

Seminar on Graphical Representations of Networks
National Institute of Demographic Studies (INED), Paris, France

Invited Talk: Visualizing Social Networks using Matrices

Social Network Analysis and Visualization Workshop
Graph Drawing Conference (GD'05), Limerick, Ireland

2004

Participation of the Information Visualization Summer School

Computer Science Research Lab. of Bordeaux(LaBri), Bordeaux, France

2003 **Student Volunteer at AIED'03**
Artificial Intelligence in Education Conference
Sydney, Australia

Teaching Activities

- 2007-2008 **Introduction to Software Engineering: Philosophy and Methodologies.**
Adult Formation for SNCF employees (French National Railway Company), 8h
Duties included planning, creating and delivering lectures.
University Institute of Technology, University of Paris-Sud, France
- Summer
2007 **Supervision of Ludovic Hauchemaille**
3 months final year undergraduate Internship
Initiation to research in Information Visualization
Topic: EmailVis, an extension for Thunderbird
- 2004-2007 **Teaching position for 3 years (64 to 96 hours/year)**
University Institute of Technology, University of Paris-Sud, France
- 2006-2007 **EmalVis: Visualizing Email Flow**
Undergraduate Final Project, 48h + full week, 14 students. Initiation to Information Visualization.
I was solely responsible for the project. Duties included planning, creating and delivering lectures,
defining the content, dividing the project in 7 teams of 2 students, preparing final written and oral
exams (counting as a third the final degree grade).
Result of the project available at <http://emailvis.sourceforge.net>
University Institute of Technology, University of Paris-Sud, France
- Introduction to XML**
Undergraduate course, 13h
University Institute of Technology, University of Paris-Sud, France
- Introduction to Software Engineering: Philosophy and Methodologies.**
Adult Formation for SNCF employees (French National Railway Company), 11h (see above)
University Institute of Technology, University of Paris-Sud, France
- 2005-2006 **Designing Information Systems with UML**
Undergraduate tutorials & practicals, 64h
Duties included planning and delivery of weekly tutorials, creating part of the assignments and their
marking schemes
University Institute of Technology, University of Paris-Sud, France
- Introduction to Software Engineering: Philosophy and Methodologies.**
Adult Formation for SNCF employees (French National Railway Company), 5h (see above)
University Institute of Technology, University of Paris-Sud, France
- 2004-2005 **Designing Information Systems with UML**
Undergraduate tutorials & practicals, 64h (see above)
University Institute of Technology, University of Paris-Sud, France
- 2002-2003 **Member of the association: Tomorrow Engineers?**
Presentation of our curriculum and career choices in high schools and fora
National Institute of Applied Science (INSA), Lyon, France

References

Research **Pr. Jean-Daniel Fekete**
Research director of the AVIZ team
INRIA, France
+33 (0)1 6915 6494
jean-daniel.fekete@inria.fr
<http://www.aviz.fr/~fekete>

Pr. Peter Eades
Research director of the HxI team, NICTA, Australia
Full Professor, school of IT, Univ. of Sydney, Australia
+61 (0)2 8374 5550
peter.eades@nicta.com.au
<http://www.cs.usyd.edu.au/~peter/>

Additional references available upon request

Teaching Dr. Francoise Schlienger
Associate Professor
Department of Computer science, university of Paris-Sud
francoise.schlienger@u-psud.fr

Hobbies

Plastic Arts Acrylic Paintings & Charcoals
Member of the Plastic Arts Studies Department at INSA (3-year course)

Music Piano for ~10 years
Cello for 8 months

Sport Horse Riding (english, american and australian style)
Skuba Diving, PADI Advanced Diver certification