Saiganesh Swaminathan

Masters Student

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Research Interests

Summary   I'm excited to be a part of research ventures that lead to building interactive systems, toolkits and tools that leverages the existing theories on human capabilities, interaction contexts in real world and novel device modalities

Interested Areas   Interaction techniques, Design of Interactive systems, Methods and theories for understanding users

Education

2012–2014   **Masters in Human Computer Interaction and Design**, *Universitè Paris-Sud*, Paris, France.
Dual degree masters program with TU Berlin as the second university. The masters program is organised by **EIT ICT Labs Masters School** - European Institute of Technology.
Relevant Courses: Introduction to HCI, Programming Interactive Systems, User-centered design methods, Interactive computer graphics

2008–2012   **B.Tech in Computer Science and Engineering**, *Shanmuga Arts Science Technology and Research Academy*, Thanjavur, TN, India, *GPA: 8/10*.
Relevant Courses: Pervasive Computing, Design and Analysis of Algorithms, Theory Of Computation, Object Oriented Analysis and Design

2011–2012   **Exchange Student at department of computer science**, *ETH Zürich*, Zürich, Switzerland, *4.95/6*.
Relevant Courses: Bachelor-Thesis, Human Computer Interaction, Research in Computer Science, Web Engineering, Software Engineering Laboratory, Software Architecture

Publications

- **Saiganesh Swaminathan**, Conglei Shi, Yvonne Jansen, Pierre Dragicevic, Lora Oehlberg, Jean-Daniel Fekete. Supporting The Design and Fabrication of Physical Visualizations. *CHI 2014*: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ACM, pages 3845-3854, April 2014.
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- **Saiganesh Swaminathan**, Conglei Shi, Yvonne Jansen, Pierre Dragicevic, Lora Oehlberg, Jean-Daniel Fekete. Creating Physical Visualizations With MakerVis. Interactivity Demo at *CHI 2014*: Extended Abstracts of the SIGCHI Conference on Human Factors in Computing Systems, ACM, pages 543-546, April 2014.
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- **Saiganesh Swaminathan**, PIM Touch: Extending Personal Information Management Paradigms for Multi-touch Interaction Contexts, *Bachelor Thesis*, ETH Zürich, Feb 2012

Selected Research Experiences

Project   **Supporting design and fabrication of physical visualizations**

May 2013–Sep 2013   *Research Intern, AVIZ group at* **INRIA-Saclay**, Advisers: Dr. Yvonne Jansen, Dr. Pierre Dragicevic.
We designed a prototype – MakerVis to help non-experts in fabrication to build physical visualizations. The tool generates parametric design files based on data specific properties and fabrication specific properties. Further more we conducted design sessions with users and results were submitted as a papers to CHI 2014

Project	**Integrating and Extending Multi-Touch Interactions context to Existing Applications**
Jun 2011–Jan 2012	*Research Intern & bachelor thesis student*, *Global Information Systems group at* **ETH Zürich**, Advisers: Dr. Michael Nebeling, Prof. Moira Norrie.
	We investigated the gradual adaptation of existing web applications to touch and multi-touch devices using jQMultiTouch. jQMultiTouch is a javascript based framework for developing multi-touch interactions on the web. My role in the project involved extending the Personal Information Management (PIM) paradigms to multitouch interaction contexts by re-engineering existing PIM applications. Further, I also helped in evaluating the framework by building these applications. The results of the work are published as part of my bachelor thesis.

Skill Set

HCI Skills:	Paper Prototyping, Semi-structured interviews, Critical Incident Technique, User Studies, Video Prototyping, Study Design	Ides and software:	Eclipse, Vim, NetBeans, Familiar with UNIX/Linux environments, Revision control (Mercurial, SVN, Git)
Programming Languages:	C, C++, Java (J2EE, Swing), Eiffel	Sysadmin skills:	Apache, Squid, NFS, DHCP, NTP, SSH, DNSandSNMP
Web Technologies:	PHP, HTML5, CSS, JavaScript, JavaFX, jQuery, AJAX, NodeJS	Other Tools:	R statistical modelling(Moderate),LATEX
DBMS:	MySQL, SQLlite, Oracle, SQL Server	Other:	Experience in academic research, experimental design and methodology

Scholarships

○ **EIT ICT Labs Excellence Nominee** which includes stipend, tuition fee waiver and travel support for attending two graduate schools. Awarded by European Insitute of Technology for entire duration of the masters program .

○ **Desh-Videsh** scholarship for pursuing academic endeavours abroad awarded by SASTRA university which covered round trip travel and living expenses .

○ Schloarship awarded by **Global information systems group, ETH Zürich** to pursue research activities at ETH Zürich

Selected Project Experiences

Project	**FloorCom: Interactive floor communication for conference attendees**
Jan 2013–Mar 2013	*Student, CourseProject*, *Universitè Paris-Sud*, Professor: Wendy Mackay.
	As a part of the user centered design course we developed a video prototype of a concept called Floorcom. Floorcom is an interactive floor that helps conference attendees be aware of each others presence and helps in performing conference specific activities such as connecting with researchers, finding schedules for different talks, etc. As a part of the course we learned to do interviews, use grounded theory, create user personas, profiles, design scenarios, design space and storyboards. The design scenarios were further refined and redesigned with theories from social sciences and finally leading to a video prototype.
Project	**TweetZoom: Exploration of Twitter with PolyZoom**
Sep 2012–Dec 2012	*Student, CourseProject*, *Universitè Paris-Sud*, Professor: Michel Beaudouin-Lafon.
	We implemented the interaction technique – PolyZoom from CHI 2012 by building a mash-up application which uses the technique. The application allows user to navigate tweets around the world by progressively building hierarchies of focus regions (stacked on top) with certain magnification. The hierarchies can be created and compared side by side which provides spatial context for tweets and therefore helps in comparing tweets from spatially distant parts of the world simultaneously. The applications is built on nodeJS, by using APIs such as Twitter search API and Google maps API.
Project	**Semester Project: Computer Vision Labratory**

Oct 2011–Nov 2011	*Student, CourseProject*, *ETH Zürich*, Advisers: Dr. Helmut Grabner, Prof. Luc Van Gool. I worked on a project to improve the machine learning algorithm that detects and categorizes objects based on physical affordances. We investigated various parameters like physical stability of the objects, material properties, etc through which the algorithm could be improved for better classification results in a 3d scene.
Project	**libDB & libSpell: Libraries with API for relational database access and cross platform spelling check**
Feb 2011–May 2011	*Student, CourseProject*, *ETH Zürich*, Professor: Bertrand Meyer. We designed and implemented two libraries which provided APIs to help programmers access RDBs from Eiffel and provide spelling hints during programming. The libSpell library uses google toolbar api in the backend. Throught the project, we followed various methods of software development and designed the API with concepts we learned during the course such as principles of software architecture, design patterns, design by contracts, etc.

Languages

English	**Fluent**
German	**Intermediate**
Tamil	**Native**
French	**Basic**

References

Yvonne Jansen, Postdoctoral researcher, Department of Computer Science, University of Copenhagen, Denmark.
email: jansen@lri.fr

Pierre Dragicevic, Research Scientist, INRIA, France.
email: dragice@lri.fr

Moira Norrie, Professor, Global Information Systems Group, ETH Zürich, Zürich.
email: norrie@inf.ethz.ch

Michael Nebeling, Postdoctoral researcher & Lecturer, Global Information Systems Group, ETH Zürich, Zürich.
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