

# Saiganesh Swaminathan

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*Research Fellow at Microsoft Research India*

## Research Interests

**Summary** I am interested in understanding how interactive computing can meaningfully impact the lives of people who are marginalized and underserved in the society, e.g, how computing can affect areas like health and education for people living in developing regions, people with disability, etc.

**Interested Areas** HCI, ICTD, Sustainable Development, Accessibility

## Education

- July 2015 **Masters in ICT Innovation**, *Technical University of Berlin*, Berlin, Germany.  
Dual degree masters program with Université Paris-Sud in France. Major in Human-Computer Interaction and with a Business Minor. The masters program is organized by the European Institute of Technology.  
**Relevant Courses:** Introduction to HCI, Programming Interactive Systems, User-centered design methods, Interactive computer graphics
- July 2012 **B.Tech in Computer Science and Engineering**, *Shanmuga Arts Science Technology and Research Academy*, Thanjavur, TN, India.  
**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.  
**Relevant Courses:** Bachelor-Thesis, Human Computer Interaction, Research in Computer Science, Web Engineering, Software Engineering Laboratory, Software Architecture

## Publications

- **Saiganesh Swaminathan**, Thijs Roumen, Robert Kovacs, David Stangl, Stefanie Mueller, and Patrick Baudisch. Linespace: A Sensemaking Platform for the Blind. *In Proc. of CHI'16: ACM*, (Full paper, to appear), May 2016
- **Saiganesh Swaminathan**, Spacemex: Repurposing 3d printers as spatial output devices for the blind and visually impaired, *Masters Thesis*, TU Berlin, July 2015
- Benjamin V. Hanrahan, Jutta K. Willamowski, **Saiganesh Swaminathan**, David B. Martin. TurkBench: Rendering the Market for Turkers *In Proc. of CHI'15: ACM*, Pages 1613-1616, April 2015
- **Saiganesh Swaminathan**, Conglei Shi, Yvonne Jansen, Pierre Dragicevic, Lora Oehlberg, Jean-Daniel Fekete. Supporting The Design and Fabrication of Physical Visualizations. *In Proc. of CHI'14: ACM*, pages 3845-3854, April 2014.
- **Saiganesh Swaminathan**, Conglei Shi, Yvonne Jansen, Pierre Dragicevic, Lora Oehlberg, Jean-Daniel Fekete. Creating Physical Visualizations With MakerVis. Interactivity Demo at CHI'14. *In Proc. of CHI'14 EA: ACM*, pages 543-546, April 2014.
- **Saiganesh Swaminathan**, PIM Touch: Extending Personal Information Management Paradigms for Multi-touch Interaction Contexts, *Bachelor Thesis*, ETH Zürich, Feb 2012

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## Selected Research Experiences

Project **Learn2Earn: Incentivizing learning by paying users directly to learn concepts through mobile phones**

*Research Fellow, Technologies for Emerging Markets group at **Microsoft Research India**, Advisers: Bill Thies, Ed Cutrell.*

I am currently exploring, how to disseminate information rapidly in rural areas by incentivizing learning through mobile phones.

Project **LineSpace: A sensemaking platform for the Blind**

*Research Assistant, HCI Lab at **Hasso-Plattner-Institut, Berlin**, Advisers: Stefanie Mueller, Prof. Patrick Baudisch.*

We explored how to build a sensemaking platform for blind users. Linespace helps blind users interact and do spatial sensemaking tasks with large and dynamic audio tactile graphics such as diagrams, maps and drawings. I was the overall lead for the project collaborating with undergrad students and PhD students. This work is accepted for publication at CHI'16

Project **TurkBench: Rendering the Market for Turkers**

*Research Intern, Work Practice Technology group at **Xerox Research Europe Centre, Grenoble**, Advisers: Ben Hanrahan, David Martin.*

Several tools were developed that helped requesters (job providers) in crowdsourcing marketplace, however there was no support for the workers. For example, they faced huge challenges in navigating this labor market, i.e, finding better paid jobs and jobs that match their interest. We explored how to help Turkers navigate labor markets effectively and designed Turkbench as tool to help. I contributed to the design of the analysis tool used by the Turkers. The work led to a Note publication at CHI2015.

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

*Research Intern, AVIZ group at **INRIA, Paris**, Advisers: Yvonne Jansen, Pierre Dragicevic.*

In this project, I investigated how to equip makers with design tools to build personal data displays such as physical visualizations. Physical visualizations are objects that embody data in physical form instead of pixels or ink and in the context of makers, they they help them communicate meaning and elicit reflection on data. I was the overall lead for the project collaborating with other students and researchers. This work led to a full publication at CHI 2014 in Toronto, where I gave talk and presented the work

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## Skill Set

HCI Skills: Paper Prototyping, Semi-structured interviews, Critical Incident Technique, User Studies, Video Prototyping, Study Design

Programming Javascript, HTML 5, CSS 3, D3, Processing, OpenGL, OpenCV, Python, Django, C, C++, Java, MySQL

Hardware: Gcode, Digital Fabrication, Arduino programming, Machining, Tooling, 3d printers, Lasercutters, CNC Routers

Design: Photoshop, Illustrator, Premiere

Other Tools: R statistical modelling

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## Scholarships

- **EIT ICT Labs Excellence Nominee** which includes stipend, tuition fee waiver and travel support for attending two graduate schools.(16,800 euros with tuition fee waivers).
- **Desh-Videsh** scholarship for study abroad awarded by (1000 euros + roundtrip air tickets).
- Scholarship awarded by **Global information systems group, ETH Zürich** to pursue research activities at ETH Zürich (5,250 Swiss Francs)
- Roundtrip travel expenses from INRIA to present my scientific paper in Toronto, Canada
- Bonus for filing invention disclosure at Xerox Research Europe

- Stipendium from Hasso Plattner Institut to finish my thesis

## Languages

English	<b>Fluent</b>
German	<b>Intermediate</b>
Tamil	<b>Native</b>
French	<b>Basic</b>

## References

**Patrick Baudisch**, Professor at Hasso-Plattner-Institute, Berlin. Germany. Chair of the Human-Computer Interaction Lab.  
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**Pierre Dragicevic**, Research Scientist, INRIA, Paris-Saclay, France.  
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**Bill Thies**, Senior Researcher, Technology for emerging markets group, Microsoft Research India, Bangalore. email: [thies@microsoft.com](mailto:thies@microsoft.com)