

# WILLIAM THIES

Microsoft Research India  
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## EDUCATION

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**Massachusetts Institute of Technology** 2002—Feb. 2009

Doctor of Philosophy, Computer Science and Engineering

Thesis: Language and Compiler Support for Stream Programs.

*Recipient of the 2010 ACM SIGPLAN Outstanding Doctoral Dissertation Award*

Advisor: Saman Amarasinghe.

**New England Biolabs** Aug. 2004

Certified Molecular Biologist

Intensive two-week course on experimental molecular biology, with focus on laboratory experience.

**Massachusetts Institute of Technology** 1997—2002

Bachelors of Science, Mathematics

Bachelors of Science, Computer Science and Engineering

Masters of Engineering, Computer Science and Engineering

Undergraduate concentration in economics; graduate concentration in biology. GPA: 5.0/5.0.

## RECOGNITION

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MacArthur Fellowship	2016
CHI Best Paper Award	2015
CHI Best Paper Honorable Mention	2011
ACM SIGPLAN Outstanding Doctoral Dissertation Award (international co-winner)	2009
Eta Kappa Nu Outstanding EECS Student Award (national co-winner)	2001
Siebel Scholar (\$25,000 scholarship to “top 5” computer science students at MIT)	2000
Eta Kappa Nu, Tau Beta Pi, Sigma Xi, and Phi Beta Kappa honor societies	2000, 2001
Finalist, Westinghouse Science Talent Search	1997
Eagle Scout	1994

## PROJECT RECOGNITION

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Manthan Award (runner-up, for IVR Junction)	2013
Tech Challenge for Atrocity Prevention (winner, for IVR Junction)	2013
mBillionth Award (special mention, for IVR Junction)	2013
Manthan Award (for eCompliance)	2011
mBillionth Award (for eCompliance)	2011
India eGov 2.0 Award (for CGNet Swara)	2010
mBillionth Award (for CGNet Swara)	2010

## EMPLOYMENT

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### **Microsoft Research India, Technology for Emerging Markets Group**

Bangalore, India

Dec. 2008—present

*Senior Researcher.* Leading several diverse and open research projects, often in close collaboration with student interns and community partners.

### **MIT Computer Science and Artificial Intelligence Laboratory, Compilers Group**

Cambridge, MA

Jan. 2000—Dec. 2008

*Research assistant.* Led the design and implementation of StreamIt, a language and compiler for high-performance streaming applications. Also developed programmable microfluidic chips for automating biology protocols, as well as TEK, an email-based search engine for the developing world.

### **Compaq Computer Corporation, Cambridge Research Lab**

Cambridge, MA

Jun. 1999—Aug. 2000

*Research intern.* Implemented Array SSA Form, a new compiler representation, in Compaq's *Swift* optimizing Java compiler. Developed a multi-threaded model of computation based on Array SSA.

### **MIT Media Laboratory, Epistemology and Learning Group**

Cambridge, MA

Sep. 1997—Sep. 1999

*Software engineer.* Developed a Java version of StarLogo, a massively parallel programming language and modeling environment. Applied StarLogo to research pattern formation in the *Drosophila* retina.

### **Jentek Sensors**

Watertown, MA

May 1998—Aug. 1998

*Software engineer.* Developed electromagnetic sensing software for use by Army, Navy, and Fortune 500 companies. Specialized in graphical user interface, data visualization, and instrument control.

### **Pennsylvania State University, Entomology Department**

State College, PA

Feb. 1996—Aug. 1997

*Computer programmer.* Designed and implemented fourteen artificial life models for inclusion in Camazine et al., *Self-Organization in Biological Systems*, Princeton University Press, 2001.

## ORGANIZATIONAL LEADERSHIP

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### **Everwell Health Solutions**

Bangalore, India

2014—present

*Co-Founder and Chairman.* Played a key role in setting up a new organization for 99DOTS, including raising first \$1M of grant funding, establishing scaled deployment trajectory, and growing the team.

### **CGNet Swara**

Raipur, India

2010—present

*Co-Founder.* Led technology and research for the CGNet Swara project, which grew into the CGNet Swara Foundation. Providing ongoing assistance with fundraising, strategy, and operations.

## Innovators In Health

Bihar, India

2009—present

*Co-Founder and Board Member.* Advisory role in setting up a non-profit organization to extend TB treatment to poor communities in rural India. Ongoing involvement in strategy and fundraising.

## CLT India

Bangalore, India

2013—present

*Board Member.* Strategic advisor on deploying electronic teaching aids in K12 classrooms across India, spanning recruiting, fundraising, program evaluation, research engagements, and other topics.

## SOFTWARE RELEASES

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1. **99DOTS:** Using Mobile Phones to Improve TB Medication Adherence 2014—present  
Enrolled over 37,000 patients and monitored over 1.7 million doses.  
<http://99dots.org/>
2. **CGNet Swara:** A Voice Based Platform for Citizen Reporting 2010—present  
Received over 1 million phone calls and posted over 12,000 stories.  
<http://cgnetswara.org/>
3. **qCards:** Low-Cost Audience Polling using Computer Vision 2012—present  
Potential to reach 10,000 students in India during the next year.  
<http://22bate7.com/>
4. **VidWiki:** Crowd-Powered Localization of Online Educational Videos 2014—present  
Exploratory use by Khan Academy to translate hundreds of videos into Indian languages.  
<http://vidwiki.azurewebsites.net/>
5. **eCompliance:** Using Biometrics to Improve TB Medication Adherence 2010—present  
Used by Operation ASHA to track over 25,000 TB patients across 7 countries.  
<http://www.opasha.org/our-work/technology/>
6. **IVR Junction:** Enabling Easy Replication of Interactive Voice Forums 2012—present  
Used to build the first open discussion forum with parliament members in Somaliland.  
<http://ivrjunction.org/>
7. **StreamIt:** A Language and Compiler for Stream Programs 2003—present  
Used as the research infrastructure for dozens of published papers.  
<http://groups.csail.mit.edu/cag/streamit/>

## REFEREED JOURNAL PUBLICATIONS

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1. Preeti Mudliar, Jonathan Donner and William Thies, Emergent Practices Around CGNet Swara: A Voice Forum for Citizen Journalism in Rural India, *Information Technologies and International Development (ITID)* 9 (2013), no. 2.
2. Henry Corrigan-Gibbs, Nakull Gupta, Curtis Northcutt, Edward Cutrell and William Thies, Detering Cheating in Online Environments, *ACM Transactions on Computer-Human Interaction (TOCHI)* 22 (2015), no. 6.

3. Indrani Medhi, Somani Patnaik, Emma Brunskill, S. N. Nagasena Gautama, William Thies and Kentaro Toyama, Designing Mobile Interfaces for Novice and Low-Literacy Users, *ACM Transactions on Computer-Human Interaction* 18 (2011), no. 1.
4. Vaishnavi Ananthanarayanan and William Thies, Biocoder: A programming language for standardizing and automating biology protocols, *Journal of Biological Engineering* 4 (2010), no. 13.
5. William Thies, Frédéric Vivien and Saman Amarasinghe, A Step Towards Unifying Schedule and Storage Optimization, *Transactions on Programming Languages and Systems* 29 (2007), no. 6.
6. William Thies, John Paul Urbanski, Todd Thorsen and Saman Amarasinghe, Abstraction Layers for Scalable Microfluidic Biocomputing, *Natural Computing* (2007).
7. Blaise Gassend, Charles W. O'Donnell, William Thies, Andrew Lee, Marten van Dijk and Srinivas Devadas, Learning Biophysically-Motivated Parameters for Alpha Helix Prediction, *BMC Bioinformatics* 8 (2007), no. S3.
8. John Paul Urbanski, William Thies, Christopher Rhodes, Saman Amarasinghe and Todd Thorsen, Digital Microfluidics Using Soft Lithography, *Lab on a Chip* 6 (2006), no. 1.
9. Saman Amarasinghe, Michael I. Gordon, Michal Karczmarek, Jasper Lin, David Maze, Roderic M. Rabbah and William Thies, Language and Compiler Design for Streaming Applications, *International Journal of Parallel Programming* (2005).

#### REFEREED CONFERENCE PUBLICATIONS

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10. Meghana Marathe, Jacki O'Neill, Paromita Pain and William Thies, ICT-Enabled Grievance Redressal in Central India: A Comparative Analysis, In *International Conference on Information and Communication Technologies and Development (ICTD)*, 2016.
11. Aditya Vashistha, Rajan Vaish, Edward Cutrell and William Thies, The Whodunit Challenge: Mobilizing the Crowd in India, In *International Conference on Human-Computer Interaction (INTERACT)*, 2015.
12. Meghana Marathe, Jacki O'Neill, Paromita Pain and William Thies, Revisiting CGNet Swara and its Impact in Rural India, In *International Conference on Information and Communication Technologies and Development (ICTD)*, 2015.
13. Aditya Vashistha, Edward Cutrell, Gaetano Borriello and William Thies, Sangeet Swara: A Community-Moderated Voice Forum in Rural India, In *ACM Conference on Human Factors in Computing Systems (CHI)*, 2015.
14. Aditya Vashistha, Edward Cutrell and William Thies, Increasing the Reach of Snowball Sampling: The Impact of Fixed versus Lottery Incentives, In *ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, 2015.
15. Edward Cutrell, Jacki O'Neill, Srinath Bala, B. Nitish, Andrew Cross, Nakull Gupta, Viraj Kumar and William Thies, Blended learning in Indian colleges with Massively Empowered Classroom, In *ACM Conference on Learning at Scale (L@S)*, 2015.

16. Aditya Vashistha, Erin Brady, William Thies and Edward Cutrell, Educational Content Creation and Sharing by Low-Income Visually Impaired People in India, In *ACM Symposium on Computing for Development (DEV)*, 2014.
17. Andrew Cross, Mydhili Bayyapunedi, Dilip Ravindran, Edward Cutrell and William Thies, VidWiki: Enabling the Crowd to Improve the Legibility of Online Educational Videos, In *ACM Conference on Computer Supported Cooperative Work and Social Computing (CSCW)*, 2014.
18. Niranjana Pai, Pradnya Supe, Shailesh Kore, Y.S. Nandanwar, Aparna Hegde, Edward Cutrell and William Thies, Using Automated Voice Calls to Improve Adherence to Iron Supplements During Pregnancy: A Pilot Study, In *International Conference on Information and Communication Technologies and Development (ICTD)*, 2013.
19. Andrew Cross, Mydhili Bayyapunedi, Edward Cutrell, Anant Agarwal and William Thies, Type-Righting: Combining the Benefits of Handwriting and Typeface in Online Educational Videos, In *ACM Conference on Human Factors in Computing Systems (CHI)*, 2013.
20. Dipanjan Chakraborty, Indrani Medhi, Edward Cutrell and William Thies, Man versus Machine: Evaluating IVR versus a Live Operator for Phone Surveys in India, In *ACM Symposium on Computing for Development (DEV)*, 2013.
21. Rijurekha Sen, Andrew Cross, Aditya Vashistha, Venkat Padmanabhan, Edward Cutrell and William Thies, Accurate Speed and Density Measurement for Road Traffic in India, In *ACM Symposium on Computing for Development (DEV)*, 2013.
22. Andrew Cross, Edward Cutrell and William Thies, Low-Cost Audience Polling Using Computer Vision, In *ACM Symposium on User Interface Software and Technology (UIST)*, 2012.
23. Swati Ittan, Gaurav Paruthi and William Thies, Mapping Large Educational Websites to Interactive DVDs, In *IEEE International Conference on Technology for Education (T4E)*, 2012.
24. Nupur Bhatnagar, Abhishek Sinha, Navkar Samdaria, Aakar Gupta, Shelly Batra, Manish Bhardwaj and William Thies, Biometric Monitoring as a Persuasive Technology: Ensuring Patients Visit Health Centers in India's Slums, In *International Conference on Persuasive Technology (PERSUASIVE)*, 2012.
25. Nicola Dell, Vidya Vaidyanathan, Indrani Medhi, Edward Cutrell and William Thies, "Yours is Better!" Participant Response Bias in HCI, In *ACM Conference on Human Factors in Computing Systems (CHI)*, 2012.
26. Aakar Gupta, William Thies, Edward Cutrell and Ravin Balakrishnan, mClerk: Enabling Mobile Crowdsourcing in Developing Regions, In *ACM Conference on Human Factors in Computing Systems (CHI)*, 2012.
27. Preeti Mudliar, Jonathan Donner and William Thies, Emergent Practices Around CGNet Swara, A Voice Forum for Citizen Journalism in Rural India, In *International Conference on Information and Communication Technologies and Development (ICTD)*, 2011.
28. Gaurav Paruthi and William Thies, Utilizing DVD Players as Low-Cost Offline Internet Browsers, In *ACM Conference on Human Factors in Computing Systems (CHI)*, 2011.

29. Abhishek Udupa, Kaushik Rajan and William Thies, Alter: Leveraging Breakable Dependencies for Parallelization, In *Conference on Programming Language Design and Implementation (PLDI)*, 2011.
30. Jay Chen, David Hutchful, William Thies and Lakshminarayanan Subramanian, Analyzing and Accelerating Web Access in a School in Peri-Urban India, In *International World Wide Web Conference (WWW)*, 2010.
31. Shashank Khanna, Aishwarya Ratan, James Davis and William Thies, Evaluating and Improving the Usability of Mechanical Turk for Low-Income Workers in India, In *ACM Symposium on Computing for Development (DEV)*, 2010.
32. Kiran Gaikwad, Gaurav Paruthi and William Thies, Interactive DVDs as a Platform for Education, In *International Conference on Information and Communication Technologies and Development (ICTD)*, 2010.
33. William Thies and Saman Amarasinghe, An Empirical Characterization of Stream Programs and its Implications for Language and Compiler Design, In *International Conference on Parallel Architectures and Compilation Techniques (PACT)*, 2010.
34. Nada Amin, William Thies and Saman Amarasinghe, Computer-Aided Design for Microfluidic Chips Based on Multilayer Soft Lithography, In *International Conference on Computer Design – Invited Paper (ICCD)*, 2009.
35. William Thies, Steven Hall and Saman Amarasinghe, Manipulating Lossless Video in the Compressed Domain, In *ACM Multimedia*, 2009.
36. Somani Patnaik, Emma Brunskill and William Thies, Evaluating the Accuracy of Data Collection on Mobile Phones: A Study of Forms, SMS, and Voice, In *International Conference on Information and Communication Technologies and Development (ICTD)*, 2009.
37. William Thies, Vikram Chandrasekhar and Saman Amarasinghe, A Practical Approach to Exploiting Coarse-Grained Pipeline Parallelism in C Programs, In *International Symposium on Microarchitecture (MICRO)*, 2007.
38. Michael I. Gordon, William Thies and Saman Amarasinghe, Exploiting Coarse-Grained Task, Data, Pipeline Parallelism in Stream Programs, In *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2006.
39. William Thies, John Paul Urbanski, Todd Thorsen and Saman Amarasinghe, Abstraction Layers for Scalable Microfluidic Biocomputers, In *International Meeting on DNA Computing (DNA)*, 2006.
40. Sitij Agrawal, William Thies and Saman Amarasinghe, Optimizing Stream Programs Using Linear State Space Analysis, In *International Conference on Compilers, Architecture, Synthesis for Embedded Systems (CASES)*, 2005.
41. William Thies, Michal Karczmarek, Janis Sermulins, Rodric Rabbah and Saman Amarasinghe, Teleport Messaging for Distributed Stream Programs, In *Symposium on Principles and Practice of Parallel Programming (PPoPP)*, 2005.

42. Janis Sermulins, William Thies, Rodric Rabbah and Saman Amarasinghe, Cache Aware Optimization of Stream Programs, In *Conference on Languages, Compilers, Tools for Embedded Systems (LCTES)*, 2005.
43. Amy Williams, William Thies and Michael D. Ernst, Static Deadlock Detection for Java Libraries, In *European Conference on Object-Oriented Programming (ECOOP)*, 2005.
44. Andrew A. Lamb, William Thies and Saman Amarasinghe, Linear Analysis and Optimization of Stream Programs, In *Conference on Programming Language Design and Implementation (PLDI)*, 2003.
45. Michal Karczmarek, William Thies and Saman Amarasinghe, Phased Scheduling of Stream Programs, In *Conference on Languages, Compilers, Tools for Embedded Systems (LCTES)*, 2003.
46. Michael I. Gordon, William Thies, Michal Karczmarek, Jasper Lin, Ali S. Meli, Andrew A. Lamb, Chris Leger, Jeremy Wong, Henry Hoffmann, David Maze and Saman Amarasinghe, A Stream Compiler for Communication-Exposed Architectures, In *International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS)*, 2002.
47. William Thies, Michal Karczmarek and Saman Amarasinghe, StreamIt: A Language for Streaming Applications, In *International Conference on Compiler Construction (CC)*, 2002.
48. Libby Levison, William Thies and Saman Amarasinghe, Providing Web Search Capability for Low-Connectivity Communities, In *International Symposium on Technology and Society (ISTAS)*, 2002.
49. William Thies, Janelle Prevost, Tazeen Mahtab, Genevieve T. Cuevas, Saad Shakhshir, Alexandro Artola, Binh D. Vo, Yuliya Litvak, Sheldon Chan, Sid Henderson, Mark Halsey, Libby Levison and Saman Amarasinghe, Searching the World Wide Web in Low-Connectivity Communities, In *International World Wide Web Conference (WWW)*, 2002.
50. William Thies, Frédéric Vivien, Jeffrey Sheldon and Saman Amarasinghe, A Unified Framework for Schedule and Storage Optimization, In *Conference on Programming Language Design and Implementation (PLDI)*, 2001.

#### REFEREED WORKSHOP PUBLICATIONS

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51. Erin Brady, William Thies and Edward Cutrell, No access, no knowledge, or no interest? Examining use and non-use of assistive technologies, In *Workshop on Technology Non-use (CHI Workshop)*, 2014.
52. Aditya Vashistha and William Thies, IVR Junction: Building Scalable and Distributed Voice Forums in the Developing World, In *6th USENIX/ACM Workshop on Networked Systems for Developing Regions (NSDR)*, 2012.
53. Arunesh Mathur, Harshal Choudhary, Priyank Vashist, William Thies and Santhi Thilagam, An Empirical Study of License Violations in Open Source Projects, In *IEEE Software Engineering Workshop (SEW)*, 2012.
54. Prasanta Bhattacharya and William Thies, Computer Viruses in Urban Indian Telecenters: Characterizing an Unsolved Problem, In *ACM Workshop on Networked Systems for Developing Regions (NSDR)*, 2011.

55. William Thies, Aishwarya Ratan and James Davis, Paid Crowdsourcing as a Vehicle for Global Development, In *Workshop on Crowdsourcing and Human Computation (CHI Workshop)*, 2011.
56. Michael Paik, Navkar Samdaria, Aakar Gupta, Julie Weber, Nupur Bhatnagar, Shelly Batra, Manish Bhardwaj and William Thies, A Biometric Attendance Terminal and its Application to Health Programs in India, In *Workshop on Networked Systems for Developing Regions (NSDR)*, 2010.
57. Pratik Kotkar, William Thies and Saman Amarasinghe, An Audio Wiki for Publishing User-Generated Content in the Developing World, In *HCI for Community and International Development (CHI Workshop)*, 2008.
58. Blaise Gassend, Charles W. O'Donnell, William Thies, Andrew Lee, Marten van Dijk and Srinivas Devadas, Predicting Secondary Structure of All-Helical Proteins Using Hidden Markov Support Vector Machines, In *Workshop on Pattern Recognition in Bioinformatics (PRIB)*, 2006.
59. Jiawen Chen, Michael I. Gordon, William Thies, Matthias Zwicker, Kari Pulli, and Frédo Durand, A Reconfigurable Architecture for Load-Balanced Rendering, In *SIGGRAPH / Eurographics Workshop on Graphics Hardware*, 2005.
60. Libby Levison, Bill Thies and Saman Amarasinghe, The TEK Search Engine, In *Workshop on Development by Design (DYD)*, 2001.

#### REFEREED POSTER ABSTRACTS AND SHORT PUBLICATIONS

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61. Henry Corrigan-Gibbs, Nakull Gupta, Curtis Northcutt, Edward Cutrell and William Thies, Measuring and Maximizing the Effectiveness of Honor Codes in Online Courses, In *Work In Progress Session, ACM Conference on Learning at Scale (L@S WiP)*, 2015.
62. Nakull Gupta, Jacki O'Neill, Andrew Cross, Edward Cutrell and William Thies, Source Effects in Online Education, In *Work In Progress Session, ACM Conference on Learning at Scale (L@S WiP)*, 2015.
63. Andrew Cross, Rashmi Rodrigues, George D'Souza and William Thies, 99DOTS: Using Mobile Phones to Monitor Adherence to Tuberculosis Medications, In *Global mHealth Forum*, 2014.
64. Linda Nixon, Jona Roy, Hema Latha, Sachin Rao, Bhagya Rangachar and William Thies, Measuring the Learning Benefits of Electronic Teaching Aids in Low-Resource Classrooms, In *Poster Session, ACM Symposium on Computing for Development (DEV Poster)*, 2014.
65. Krittika D'Silva, Meghana Marathe, Aditya Vashistha, Gaetano Borriello and William Thies, A Mobile Application for Interactive Voice Forums: Design and Pilot Deployment in Rural India, In *Poster Session, ACM Symposium on Computing for Development (DEV Poster)*, 2014.
66. Andrew Cross, B. Ashok, Srinath Bala, Edward Cutrell, Naren Datha, Rahul Kumar, Viraj Kumar, Madhusudan Parthasarathy, Siddharth Prakash, Sriram Rajamani, Satish Sangameswaran, Deepika Sharma and William Thies, Online Learning versus Blended Learning: An Exploratory Study, In *Poster Session, ACM Conference on Learning at Scale (L@S Poster)*, 2014.



67. Aditya Vashistha and William Thies., How Should Users Convey Their Location to an Interactive Voice Response System?, In *Poster Session, ACM Symposium on Computing for Development (DEV Poster)*, 2013.
68. Pranav Ramkrishnan, Aditya Vashistha, Edward Cutrell and William Thies, DocTalk: Extending Doctors Visits with Personalized Voice Messages, In *Poster session, ACM Symposium on Computing for Development (DEV Poster)*, 2013.
69. William Thies, Why it is Hard to Identify Technical Research Problems in ICT4D and How to Make it Easier, In *CCC Workshop on Computer Science and Global Development*, 2009.
70. Vaishnavi Ananthanarayanan and William Thies, Towards a High-Level Programming Language for Standardizing and Automating Biology Protocols, In *International Workshop on Bio-Design Automation (IWBDA)*, 2009.
71. Pratik Kotkar, William Thies and Saman Amarasinghe, An Audio Wiki for Building Local Repositories of Knowledge in the Developing World, In *Poster Session, Workshop on Wireless Systems: Advanced Research and Development (WISARD)*, 2008.
72. Blaise Gassend, Charles W. O'Donnell, William Thies, Andrew Lee, Marten van Dijk and Srinivas Devadas, Learning Biophysically-Motivated Parameters for Alpha Helix Prediction, In *Poster Session, International Conference on Research in Computational Molecular Biology (RECOMB Poster Session)*, 2006.
73. William Thies, John Paul Urbanski, Mats Cooper, David Wentzlaff, Todd Thorsen, and Saman Amarasinghe, Programmable Microfluidics, In *Wild and Crazy Ideas Session, International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS WACI)*, 2004.
74. William Thies, Michal Karczmarek, Michael Gordon, David Maze, Jeremy Wong, Henry Hoffmann, Matthew Brown and Saman Amarasinghe, A Common Machine Language for Grid-Based Architectures, In *ACM SIGARCH Computer Architecture News*, 2002.
75. William Thies, Chemical Weathering in Bondhusbreen Glacier Valley, Norway: Implications for Global Carbon Cycle Models. In *EOS Trans. American Geophysical Union, 78 (17)* Spring Meeting, 1997.

#### OTHER PUBLICATIONS

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76. William Thies, Language and Compiler Support for Stream Programs, Ph.D. Thesis, Massachusetts Institute of Technology, February, 2009.
77. Peter Mattson, William Thies, Lance Hammond and Michael Vahey, Streaming Virtual Machine Specification, Version 1.0, Tech. report, 2004.
78. William Thies, A Unified Framework for Schedule and Storage Optimization, M.Eng. Thesis, Massachusetts Institute of Technology, June, 2002.

## SELECTED TALKS

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1. Frugal Innovations for a Developing World.  
*Dertouzos Distinguished Lecture, MIT CSAIL* Feb. 2017
2. Compilers Without Borders:  
Repurposing Paper, Plastic, and Household Devices as Computational Substrates.  
*POPL Off the Beaten Track, Mumbai, India* Jan. 2015
3. Toward Scalable Voice Forums in Rural Communities.  
*Cornell Tech* Sep. 2014  
*United Nations Democracy Fund (Joint with Meghana Marathe)* Sep. 2014
4. MOOCs in the Developing World: Lessons from India.  
*Learning At Scale (Joint talk with Ed Cutrell)* Mar. 2014
5. Impacting Global Health and Human Development via Mobile Technologies.  
*Carnegie Mellon HCII Seminar Series* Feb. 2014  
*FHIES 2013 (Keynote), Macau* Aug. 2013  
*CMU Rwanda (Distinguished Lecture)* Apr. 2013  
*John's Hopkins University (mHealth Seminar Series)* Mar. 2013
6. Mobile Systems Research in the Developing World (panel presentation).  
*HotMobile* Feb. 2013
7. Social Media in India - From Text to Voice.  
*Social Media Innovations for the Everyday Man, IIT Bombay* Feb. 2012
8. Offline Wikipedia on Low-Cost Devices.  
*WikiConference India, Mumbai, India* Nov. 2011
9. The Future of Social Media in India: From Text to Voice  
*"India's Digital Futures: A Blockbuster Funda" at Godrej, Mumbai, India* Nov. 2011
10. Technologies for Healthcare Delivery.  
*IIT Bangalore* Sep. 2011
11. Bringing Programmability to Experimental Biology.  
*International Conference on Information Processing (Keynote), Bangalore, India* Aug. 2011
12. Microfluidic Biochips: Design, Programming, and Optimization.  
*4th Workshop on Nanocomputing and Biochips, Kolkata, India* Mar. 2011
13. Bridging the Connectivity Divide from an Applications Perspective:  
Experiences, Challenges, Opportunities.  
COMSNETS 2011, Panel on "Bridging the Connectivity Divide", Bangalore, India Jan. 2011
14. Improving Access and Usability of Technologies in Developing Regions.  
*IIT Delhi* Aug. 2010
15. Leveraging Familiar Technologies for Citizen Journalism, Education, and Healthcare in India.  
*Stanford University, Seminar on Liberation Technology* Mar. 2010

16. Technologies for Healthcare Delivery.  
*Birla Institute of Technology* Feb. 2010  
*International Conference on VLSI Design* Jan. 2010  
*GE Healthcare Symposium* Nov. 2009
17. Designing Mobile Interfaces for Novice and Low-Literate Users.  
*India International HCI Conference (USID)* Sep. 2009
18. Monitoring and Improving Rural Tuberculosis Treatment.  
*mHealth India Workshop, Bangalore, India* Apr. 2009
19. Improving Rural Healthcare Delivery via Transparent Monitoring.  
*Medical Informatics and Telemedicine Conference (MEDITEL), Chennai, India* Dec. 2008
20. Extending the Capabilities of the Internet to the Rural Developing World.  
*Carnegie Mellon University* Apr. 2008  
*Microsoft Research India* Jan. 2008  
*Princeton University* Mar. 2007  
*Google New York* Jul. 2005
21. Stream Programming: Luring Programmers into the Multicore Era.  
*Stanford University* Apr. 2008  
*University of Texas at Austin* Apr. 2008  
*Carnegie Mellon University* Apr. 2008  
*University of Washington* Mar. 2008  
*Cornell University* Mar. 2008  
*University of Toronto* Mar. 2008  
*University of Illinois at Urbana-Champaign* Mar. 2008  
*University of Wisconsin-Madison* Mar. 2008  
*University of California at Berkeley* Feb. 2008  
*Harvard University* Feb. 2008
22. Programmable Microfluidics.  
*Microsoft Research India* Dec. 2007  
*University of California, Berkeley* Oct. 2007  
*Stanford University* Oct. 2007  
*Pennsylvania State University* Apr. 2007
23. StreamIt: A Compiler Infrastructure for Stream Programs.  
*IBM Programming Languages Day* May 2004
24. Architectures, Languages, and Compilers for the Streaming Domain (Tutorial).  
*International Conf. on Parallel Architecture and Compilation Techniques* Sep. 2003
25. The TEK System: Browsing the Web in Low-Connectivity Communities.  
*HP Labs India* Jan. 2002  
*Indian Institute of Technology, Madras* Jan. 2002  
*University of Moratuwa* Jan. 2002

## SELECTED PRESS

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1. Microsoft Accelerate India: Technology For Growth.  
*CNBC* Jan. 2015
2. In Jungles of India, New Phone App Helps Indigenous Tribes Embroiled in Maoist Insurgency.  
*National Geographic* Sep. 2014
3. Swara gives power to the voiceless.  
*Times of India* Feb. 2014
4. Meet this Bill from Microsoft.  
*The Hindu* Nov. 2013
5. The new jungle drums.  
*The Hindu* Nov. 2013
6. CGNet Swara — Spreading a revolution with words.  
*Mint / Wall Street Journal* Nov. 2013
7. Citizen Journalism Grows in India's War-Torn Tribal Belt.  
*New York Times* Oct. 2013
8. How a Voice Portal Helped Spread Women's Tribal Stories in India.  
*PBS* Aug. 2013
9. New Apps for the Bottom Billion.  
*Technology Review* May 2012
10. Phone journalism gives a voice to India's rural poor.  
*CNN* Feb. 2012
11. Tackling TB with Technology.  
*The Guardian* Nov. 2011
12. NGO uses biometrics to monitor TB patients.  
*Times of India* Apr. 2011
13. How Amazon Mechanical Turk Fails Low-Income Workers, and How It Can Succeed.  
*Fast Company Magazine* Dec. 2010
14. Audio-Blogging From India's Maoist Heartland.  
*The Wall Street Journal* Nov. 2011
15. Listen to my voice!  
*BBC News* Nov. 2010
16. Voices in the wilderness.  
*The Hindu* Jul. 2010
17. Bringing news to India's poorest people.  
*The Atlantic* Jun. 2010
18. Giving a voice to India's villagers.  
*BBC News* Apr. 2010

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|---|-----------|
| 19. News in dialects may soon be just a call away.<br><i>The Hindu</i>              | Feb. 2010 |
| 20. MIT Builds A Better Pillbox To Prevent Drug-resistant TB<br><i>Boston Globe</i> | Mar. 2008 |
| 21. MIT honors humanitarian tech invention<br><i>New York Times</i>                 | May 2007  |
| 22. Simpler programming for multicore computers.<br><i>Technology Review</i>        | Apr. 2007 |
| 23. Radio mail links Pacific islands.<br><i>BBC News</i>                            | Apr. 2004 |
| 24. World's poor to get own search engine.<br><i>BBC News</i>                       | Jul. 2003 |

## PROFESSIONAL SERVICE

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### Editorial Boards

ITID (Associate Editor) 2014—present

### Conference Chairing

CHI (Sub-committee chair)	2014
CHI (Deputy sub-committee chair), DEV (General co-chair)	2013
DataDev (Co-organizer), DEV (PC co-chair), NetHealth (PC co-chair)	2012
IUI4DR (Organizing committee), NetHealth (Organizing committee), NSDR (PC co-chair)	2011
ICTD (Demo co-chair)	2010
CCC Workshop on Computer Science and Global Development (Organizing committee)	2009

### Program Committees

ICTD	2017
AfriCHI, DEV, ICTD, India HCI, IoT of Health	2016
ASSESS, CHI, DEV, ICTD, India HCI	2015
ASSESS, CHI, DEV-3, DEV-4, HTC, India HCI (Posters)	2014
APCHI, ASPLOS (ERC), CHI, DEV, ICTD, India HCI, IUI4DR	2013
CHI, ExtremeCom, HCIDE, ICACCI, ICTD, IT4D, India HCI, MobiCASE, NetHealth, NSDR	2012
ASPLOS (Ideas), CHI, ExtremeCom, NetHealth, NSDR, PLDI (ERC), WiTRUE, WWW	2011
CHI, DEV, ICTD, NSDR, PLDI (ERC), QMQ	2010
ICTD, NSDR	2009
STMCS	2008