

## Objective

Conduct intellectually challenging research with deep social impact

## Research Interests

Web accessibility, web content analysis, context in human-computer interactions, multimodal user interfaces, crowd-sourcing, applications of machine learning, information retrieval, natural language processing

## Selected Employment

*2010-Present Research Foundation of SUNY at Stony Brook – Research Assistant Professor*

- ✓ Conduct research and supervise graduate students in their research
- ✓ Represent the research group at conferences, demos, and presentations
- ✓ Write papers, grant proposals, and patent applications
- ✓ Organized workshop on Social Accessibility for SBU, UR, IBM, and Lighthouse (2011)

*2010-Present Charmtech Labs LLC – President and Director of Research and Development*

- ✓ Lead the development of Capti application for non-visual web browsing on desktops
- ✓ Lead the development of Capti Web Player application for iPhones/iPods
- ✓ Prepare proposals (funded 3 x \$75K Department of Education NIDRR SBIR Phase I)
- ✓ Manage company's human resources and information technology infrastructure
- ✓ Establish and maintain industry connections

*2006-2009 Research Foundation of SUNY at Stony Brook – Grad Research Assistant/Project Leader*

- ✓ Lead a team of 10-15 M.S. students to develop the HearSay Non-Visual Web Browser
- ✓ Set development goals, assign and verify tasks, design and develop critical modules
- ✓ Represented the HearSay research group at conferences, demos, and presentations
- ✓ Established and maintained industry connections, explore commercialization venues
- ✓ Conducted user studies and evaluations (certified for human subjects testing)
- ✓ Assisted in procurement and allocation of funding, equip. purchases, lab management
- ✓ Wrote publications and grant proposals: contributed technical sections to the funded NSF grants: \$1,500K research and \$120K equipment grants

*Summer 2008 IBM T.J. Watson and Tokyo Research Labs – Intern in Research*

- ✓ Study user interactions with dynamic web content (Social Accessibility Project)  
Mentor: Hironobu Takagi; Managers: Chieko Asakawa and Roger A. Pollak
- ✓ Contributed significant code to the CoScripter project at IBM Almaden Research Lab  
Collaborators: Jeffrey Nichols, Allen Cypher, Tessa Lau
- ✓ Coauthored a patent application – Japan patent pending (2009-91450)
- ✓ Coauthored a book chapter about Social Accessibility

Summer 2007 *IBM T.J. Watson Research Labs – Intern in Research*

- ✓ Studied query recommendation strategies for information seeking systems  
Mentor: Shimei Pan; Manager: Michelle Zhou

Summer 2002 *Olean General Hospital (OGH), Olean NY – Intern/Project Manager*

- ✓ Led a team representing several departments to develop the OGH Web site
- ✓ Provided training, user-support, and documentation for Web site maintenance
- ✓ Built an Intranet work-order notification system (ASP)
- ✓ Participated in an OGH Information System conversion project

## Teaching Experience

2005-Present *Stony Brook University (SUNY), NY – Guest-lecturer, Teaching Assistant*

- ✓ Guest-lectured in undergraduate and graduate theory courses
- ✓ TA'd undergrad Advance System Programming in Unix/C, CSE376, Dr. Erez Zadok
- ✓ TA'd graduate Operating Systems, CSE506, Dr. Erez Zadok

2001-2003 *Alfred State, Alfred, NY – Certified Tutor in Computer Science and Math*

- ✓ Served as a supplemental instructor for Java OOP course (*Spring 2003*)
- ✓ Initiated and led the group help-session for Information Systems students

## Education

2005-2009 **Ph.D. in Computer Science**, *Stony Brook University (SUNY), NY*

Dissertation Title: “Bridging the Web Accessibility Divide”

*Advisors:* Dr. I.V. Ramakrishnan (ALL Lab) and Dr. Amanda Stent (HCI/NLP Lab)

*Projects (Java/JavaScript):* HearSay Context-Directed Non-Visual Web Browser

TeleWeb: A System for Web Browsing via the Plain Phone

Voice Macros for Automating Repetitive Browsing Tasks

VXMLSurfer (Flexible VXML Interpreter)

CMo (Mobile Web Browser)

2003-2005 **M.S. in Computer Science (GPA 3.6)**, *Stony Brook University (SUNY), NY*

*Advisor:* Dr. Annie Liu (Design and Analysis Research Lab)

*M.S. Projects (Python):* Constraint-based pseudo-random relation generator

Web data-acquisition and validation tool based on RelaxNG XML schema

Web site generator based on XML data

2002-2003 *Alfred State College of Technology (SUNY), Alfred, NY*

Bachelor of Technology in Web Development (GPA 4.0) with **Highest Honors**

Most requirements for BTech in Software Applications and Network Administration

2001-2002 *Alfred State College of Technology (SUNY), Alfred, NY*

A.S. in Computer Science (GPA 4.0) with **Highest Honors**

2000-2001 *Shorter College, Rome, GA*

Business and Economics curriculum (GPA 4.0)

1998-2000 *State Institute of Foreign Languages, Gorlovka, Ukraine*

Toward MA in Education/Linguistics: English, German, and Literature (GPA 3.5+)

## Active Research Funding

<i>H133S110028 (Borodin)</i>	<i>PI</i>	<i>10/01/2011 – 03/31/2012</i>
National Institute of Disability and Rehabilitation Research		\$75,000
Ubiquitous Web Access for People with Visual Impairments		
<i>H133S110023 (Borodin)</i>	<i>PI</i>	<i>10/01/2011 – 03/31/2012</i>
National Institute of Disability and Rehabilitation Research		\$75,000
Goal-Oriented Browsing: The Next Generation Web Accessibility Technology for People with Visual Impairments		
<i>IIS-0808678 (Ramakrishnan)</i>	<i>co-PI</i>	<i>09/01/2008 – 08/31/2014</i>
National Science Foundation		\$1,582,860
Using the Internet without using the Eyes: Models of Online Transactions for Non-Visual Interaction		
<i>I/UCRC CGI: 1069147 (Kaufman)</i>	<i>Senior Personnel</i>	<i>03/15/2011 – 02/29/2012</i>
National Science Foundation		\$220,000
Center for Dynamic Data Analytics (CDDA)		

## Completed Research Funding

<i>H133S090065 (Chawla)</i>	<i>Senior Personnel</i>	<i>10/01/2009 – 3/31/2010</i>
National Institute on Disability and Rehabilitation Research		\$75,000
HearSay: A Context-Driven Assistive Browser for Non-Visual Web Access		
<i>Grant-in-Aid of Research (Borodin)</i>	<i>PI</i>	<i>2007 – 2008</i>
SigmaXi Scientific Research Society		\$1000

## Patents

Japan (2009-91450) and International patents pending, IBM Corporation (2009), “A Method And Computer Program For Improving Accessibility of Rich Internet Applications Using Collaborative Crawling.”

Provisional Patent pending (61480606), Charmtech Labs LLC (2011), “A Software Application that Allows People to Browse Web Pages and Web Documents with the Convenience of an Audio Player”

## **Postgraduate Awards**

- ✓ Graduate Student Conference Lab Cup 2011, SBU, Stony Brook, NY

## **Graduate Awards**

- ✓ President's Award to Distinguished Doctoral Students 2010, SBU, Stony Brook, NY
- ✓ Honorable Mention in Student Competition at Microsoft Imagine Cup Accessibility Award 2009
- ✓ SigmaXi Excellence in Research Award 2009, SigmaXi Scientific Research Society
- ✓ Honorable Mention for Increasing Accessibility, Student Application Contest, AVIOS 2009
- ✓ Catacosinos Fellowship'08, outstanding C.S. contribution, (tuition&stipend) SBU, Stony Brook, NY
- ✓ Excellence in Graduate Research Award 2007, Computer Science, SBU, Stony Brook, NY
- ✓ 1<sup>st</sup> Place at International ACM Student Research Competition Grand Finals 2007
- ✓ Travel Award 2007, SigmaXi Scientific Research Society
- ✓ Outstanding Teaching Assistant 2006, Computer Science, SBU, Stony Brook, NY

## **Undergraduate Awards**

- ✓ SUNY Chancellor's Award for Student Excellence'03, Albany, NY
- ✓ Alstom Power Inc. Air Preheater Scholarship Award'03, Alfred State, NY
- ✓ Paul B. Orvis Award for Contribution to Student Life'03 at Alfred State, NY
- ✓ Scholarship Award for Outstanding Student Leadership'02 from Alfred State, NY
- ✓ Outstanding Senior Awards in CS'02 and Web Development'03 from Alfred State, NY
- ✓ Excellence in Education Full-Coverage Scholarship 2001-2003 from Alfred State, NY
- ✓ Dean's List at Shorter College, GA and Alfred State, NY (every semester 2000-2003)
- ✓ Finalist of FSA Undergraduate Exchange Program ACCTR/ACCELS (2000-2001)

## Invited Talks

“Commencement Speech,” Stony Brook University, Ph.D. Hooding Ceremony, 2010

“Bridging the web accessibility divide: A vision for a universally accessible Web”,  
Stony Brook University Provost's Graduate Student Lecture Series, 2009

“HearSay vision for the universally accessible Web”, Center of Disabilities Conference, California  
State University Northridge, 2009

“Bridging Web accessibility divide with the HearSay browser”, Computer Science Department, Arizona  
State University, 2008

“User context and dynamic content in non-visual web-browsing”, Computer Science Department,  
University of Washington, 2008

## Selected Affiliations

*2008-Present* Member, the Institute of Electrical and Electronic Engineers (IEEE)

*2006-Present* Member, Association for Computing Machinery (ACM)

*2007-Present* Member, SigmaXi International Scientific Research Society

*2002-2003* Co-founder and Vice President, ACM chapter, Alfred State College, Alfred, NY

*2001-2003* Treasurer, International Club; Member, Honors Society Alfred State College, Alfred, NY

## Reviewing Activities

Dissertation Committee Member for Ph.D. students: Faisal Ahmed, Yury Puzis, and Valentyn Melnyk

NSF Panel Member: Human Centered Computing (HCC) Program, National Science Foundation 2011

Invited to be Program Committee co-Chair at W4A'13 and General co-Chair at W4A'14

Co-Chair of the Microsoft Challenge at W4A'12 and Google Student Competition at the W4A'11

Judge for ACM Graduate Student Research Competition at ASSETS'10

*Member of the editorial board for the books titled:*

“Pervasive and Mobile Computing.” 2011

“End User Programming for the Web.” 2011

“Multimodality in Mobile Computing and Mobile Devices: Methods for Adaptable Usability.” 2008

*Program Committee Member:*

ACM SIGACCESS Conference on Computers and Accessibility (ASSETS'07-11)

International Cross Disciplinary Conference on Web Accessibility (W4A'09-11)

International Conference on Web Information Systems and Technologies (WEBIST'11)

ACM Computer Supported Cooperative Work (CSCW'11)

Conference on Artificial Intelligence (AAAI'11)

*Reviewer:*

International Journal of Human-Computer Studies (IJHCS'10)

Journal of the American Society for Information Science and Technology (JASIST'10)

Journal of Transactions on Accessible Computing (TACCESS'09)

ACM Conference on Human Factors in Computing Systems (CHI'09-11)

International World Wide Web Conference – UI and Mobility Track (WWW'09)

## Publications

- Puzis, Y., Y. Borodin, F. Ahmed, V. Melnyk, and I.V. Ramakrishnan, An Intuitive Accessible Web Automation User Interface, *To Appear in ASSETS 2011*, ACM: Dundee, Scotland.
- Bigham, J.P., R.E. Ladner, and Y. Borodin, The Design of Human-Powered Access Technology, *To Appear in ASSETS 2011*, Dundee, Scotland
- Islam A.M., F. Ahmed, Y. Borodin, and I.V. Ramakrishnan, Thematic Reorganization of Web Content for Distraction-Free Text-to Speech Narration, *To Appear in CIKM 2011*, Glasgow, UK
- Ahmed F., M. A. Islam, Y. Borodin, and I.V. Ramakrishnan, Assistive Web Browsing with Touch Interfaces, in *ACM SIGACCESS ASSETS 2010*: Orlando, Florida, USA.
- Islam, A.M., Y. Borodin, and I.V. Ramakrishnan, Mixture Model based Label Association Techniques for Web Accessibility, in *UIST 2010*: New York, NY, USA.
- Borodin, Y., J. Bigham, G. Dausch, I.V. Ramakrishnan, “More than Meets the Eye: A Survey of Browsing Strategies with Screen Reader.” *Intl. Cross-Disciplinary Conf. on Web Accessibility – W4A 2010*.
- Borodin, Y., F. Ahmed, M. A. Islam, S. Feng, Y. Puzis, V. Melnyk, G. Dausch, I.V. Ramakrishnan, “HearSay: A New Generation Context-Driven Multi-Modal Assistive Web Browser.” *International World Wide Web Conference – WWW 2010*
- Borodin, Y., “Remote Web Browsing via the Phone with TeleWeb.” *28<sup>th</sup> ACM CHI Conference on Human Factors in Computing Systems – CHI 2010*
- Islam, M. A., F. Ahmed, Y. Borodin, J. Mahmud, I.V. Ramakrishnan, “Improving accessibility of transaction-centric Web objects,” *SDM 2010*.
- Borodin, Y., S. Kawanaka, H. Takagi, M. Kobayashi, D. Sato, C. Asakawa, “Chapter 18: Social Accessibility: a collaborative approach for improving Web accessibility,” Book: *No Code Required: Giving Users Tools to Transform the Web*, Morgan Kaufmann, 2010
- Mahmud, J., Y. Borodin, I.V. Ramakrishnan, C.R. Ramakrishnan, “Automated construction of Web accessibility models from transaction click-streams,” *Intl. World Wide Web Conference 2009*
- Borodin, Y., Glenn Dausch, I.V. Ramakrishnan, et al. “TeleWeb: accessible service for Web browsing via phone,” *Intl. Cross-Disciplinary Conf. on Web Accessibility, W4A 2009 (Judges’ Award)*.
- Borodin, Y., H. Takagi, S. Kawanaka, C. Asakawa, “Infrastructure and methods for improving accessibility of rich Internet applications,” *End-User Programming Workshop, CHI 2009*
- Ramakrishnan, I.V., J. Mahmud, Y. Borodin, A. Islam, and F. Ahmed, “Bridging the web accessibility divide,” in *Electronic Notes in Theoretical Computer Science (Invited journal)*, 2008

- Borodin, Y., “Automation of repetitive web browsing tasks with voice-enabled macros,” *10<sup>th</sup> Intl. Conf. on Computers and Accessibility – ACM SIGACCESS ASSETS 2008*.
- Borodin, Y., J. Bigham, R. Raman, and I.V. Ramakrishnan, “What’s New? – Making web page updates accessible,” *10<sup>th</sup> International Conf. – ACM SIGACCESS ASSETS 2008 (Best Student Paper)*.
- Kawanaka, S., Y. Borodin, J. Bigham, D. Lunn, H. Takagi, and C. Asawaka, “Accessibility commons: a metadata infrastructure for Web accessibility”, *10<sup>th</sup> Intl. Conf. on Computers and Accessibility – ACM SIGACCESS ASSETS 2008*.
- Borodin, Y., J. Bigham, I.V. Ramakrishnan, and A. Stent, “Towards One World Web with HearSay3,” Web Accessibility Challenge, Intl. Cross-Disciplinary Conf. on Web Accessibility – *W4A 2008*.
- Mahmud, J., Y. Borodin and I.V. Ramakrishnan, “An assistive browser for conducting Web transaction”, *International Conference on Intelligent User Interfaces – IUI 2008*.
- Guo, H., J. Mahmud, Y. Borodin, A. Stent, and I.V. Ramakrishnan, “A general approach for partitioning web page content based on geometric and style information”, *ICDAR 2007*.
- Borodin, Y., J. Mahmud, and I.V. Ramakrishnan, “Context browsing with mobiles - when less is more”, *Intl. Conf. on Mobile Systems, Applications and Services, ACM/USENIX MobiSys 2007*.
- Borodin, Y., J. Mahmud, A. Ahmed, and I.V. Ramakrishnan, "WEBVAT: Web Page Analysis and Visualization Tool", *International Conference on Web Engineering – ICWE 2007*.
- Borodin, Y., J. Mahmud, I.V. Ramakrishnan, A. Stent, et al., “The HearSay non-visual web browser,” Intl. Cross-Disciplinary Conf. on Web Accessibility – *W4A 2007 (Delegates’ Award Winner)*.
- Mahmud, J., Y. Borodin, and I.V. Ramakrishnan, “CSurf: a context-driven non-visual web browser.” *International World Wide Web Conference – WWW 2007 (1 of 3 Best Paper Nominees)*.
- Mahmud, J., Y. Borodin, D. Das, and I.V. Ramakrishnan, “Content analysis techniques to ease browsing with handhelds” – *MobEA 2007*.
- Mahmud, J., Y. Borodin, D. Das, and I.V. Ramakrishnan, “Combating information overload in non-visual web access using context,” *Intl. Conference on Intelligent User Interfaces, IUI 2007*.
- Mahmud, J., Y. Borodin, D. Das, and I.V. Ramakrishnan, “Improving non-visual Web access using context,” *Intl. Conf. on Computers and Accessibility – 8<sup>th</sup> ACM SIGACCESS ASSETS 2006*.
- Borodin, Y., “A Flexible VXML interpreter for non-visual web access”, *Intl. Conf. on Computers and Accessibility – 8<sup>th</sup> ACM SIGACCESS ASSETS 2006 (2nd place at the ACM Graduate Student Research Competition)*