DANIEL WIGDOR, PhD – CURRICULUM VITAE

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+1.416.946.8892 (for couriers)

I am a citizen of Canada and Ireland, and am eligible to work in the United States.

RESEARCH INTERESTS

My research lies in the area of Computer Science and Human Computer Interaction. I specialize in the design and engineering of post-WIMP user interface technologies. I currently focus on high-performance user interaction, design and development methods for ubiquitous computing, and tailored user interface components for unique users, technologies, or contexts of use. I have expertise in the development of user interface technologies and user interface software, particularly for post-WIMP input technologies, such as touch, stylus, and 3-D gesture.

PROFESSIONAL EXPERIENCE

2012-Present

Cofounder, Science Advisor, Tactual Labs

I am cofounder of Tactual Labs, a startup out of my lab at the University of Toronto, which seeks to enable high-performance user input to interactive computers.

2011-Present

Assistant Professor, Department of Computer Science & Department of Mathematical and Computational Sciences, University of Toronto, Co-Director, Dynamic Graphics Project.

I am an assistant professor of computer science at the University of Toronto. I hold appointments in two departments of the university, where I conduct research, supervise graduate students & postdoctoral fellows, and teach graduate and undergraduate classes. I am also co-director of the Dynamic Graphics Project, a group of 7 faculty and dozens of post docs and graduate students conducting research in the areas of computer graphics, human computer interaction, and computer vision.

2011-2012

Associate of the School of Engineering and Applied Sciences, Harvard University

As a member of the SDR Lab of SEAS at Harvard University, I participated in and provide supervision of research projects carried-out by post-doctoral fellows and interns.

2010-2012

Affiliate Assistant Professor, University of Washington

I served as an affiliate assistant professor in both the *Department of Computer Science & Engineering* and the *Information School* at the University of Washington.

2010

Researcher, Microsoft Research

As a researcher at MSR, my mandate was to carry-on an active research agenda (including publication and patents), participate in service to the community, supervise graduate student interns, and drive innovation at Microsoft Corp.

2008-2010

User Experience Architect, Entertainment & Devices Division, Microsoft Corp.

As a product team member, I held more than a half a dozen titles and roles. My ultimate position before moving to Microsoft Research was as the architect of user experiences of Natural User Interfaces at Microsoft's Entertainment & Devices division. I was responsible for ensuring a high-quality, exciting user experience in platform and partner applications, coordinating across product groups, and driving industry standards for interaction. Throughout my tenure, I had a dual focus on product architecture and research.

2007-2008

Fellow, Initiative in Innovative Computing (IIC), Harvard University

I was a fellow in the Scientists' Discovery Room project at Harvard University. I conducted ethnographic studies of astrophysicists at the Harvard Smithsonian Center for Astrophysics, and helped lead the design and implementation of the WeSpace (described by several publications listed below).

2005-2008

Research Intern, Mitsubishi Electric Research Laboratories (MERL)

I was an intern at MERL over four multi-term appointments, working as part of the Diamond Space project under the supervision of Dr. Chia Shen. I conducted the majority of my PhD at MERL.

2003-2010

Cofounder, Iota Wireless

Cofounded Iota Wireless, a startup dedicated to text-entry techniques for mobile phones. Secured multiple rounds of financing, US & international patents, and general intellectual property issues, as well as a great deal of experience working at executive level of the wireless phone industry.

2001-2006	**Sessional Instructor, Department of Computer Science, University of Toronto**
	Served as instructor responsible for undergraduate classes in computer science. Class sizes varied from 25 to over 200 students. Supervised teams of TA's, developed course materials, delivered lectures, set tests and exams. Courses in topics in computer science, including algorithms, data structures, formal analysis, human computer interaction. Taught development for computers and mobile phones in Java, C, and C++.
2004	**Consulting Designer, Bruce Mau Design**
	Collaborated with Bruce Mau Design and the Institute Without Boundaries in concept and implementation of *Markets Gallery* of the *Massive Change* project: http://www.massivechange.com.
1999-2003	**Teaching Assistant, Department of Computer Science, University of Toronto**
	Served as a teaching assistant in undergraduate classes at the University of Toronto. Led tutorials, consulted with professors on curriculum topics. Topics included computer programming, cryptography, algorithm design, formal analysis, software engineering, and human-computer interaction.
1999-2001	**Software Developer and Devices Specialist, University Health Network**
	Developed an automated inventory application for the University Health Network's Desktop Rollout Project (Y2K replacement of > 4000 personal desktops). Worked as a *Devices Specialist*, investigating and evaluating the suitability of novel devices for their inclusion in the hospitals.

EDUCATION

2008	**Ph.D. Computer Science, University of Toronto**
	Supervised by Prof. Ravin Balakrishnan at University of Toronto, majority of work conducted at Mitsubishi Electric Research Labs under the supervision of Dr. Chia Shen. Study of the use of multi-touch tabletops and large-scale, multi-surface, real-time collaborative environments. Thesis [N.4] below.
2004	**M.Sc. Computer Science, University of Toronto**
	Supervised by Prof. Ravin Balakrishnan. Thesis [N.2] and papers [C.2, C.3] below.
2002	**Hon. B.Sc., University of Toronto**
	Specialization in Human Computer Interaction, including major-equivalent in computer science, minor-equivalent in psychology and sociology. Paper [C.1] below.

AWARDS & FUNDING

2014	**ACM CHI: People's Choice Best Talk Award**
	For talk delivered by MSc student, Jishuo Yang, for [C. 40] below. Awarded to top 8 talks among 300 presented at ACM CHI. Two of the 8 were awarded to my students.
	ACM CHI: People's Choice Best Talk Award
	For talk delivered by intern advisee, Anthony Chen, for [C. 41] below. Awarded to top 8 talks among 300 presented at ACM CHI. Two of the 8 were awarded to my students.
	Early Researcher Award (ERA Round 9), Ontario Ministry of Research and Innovation ($150,000)
	Awarded to "best and brightest innovators and researchers" among full-time faculty in Ontario who are fewer than 10 years from receiving their PhD.
	Best Paper, CHI 2014
	[C.41] below was named Best Paper, which is awarded to the top 1% of submission to ACM CHI 2014.
2013	**Connaught New Researcher Award ($50,000)**
	Awarded to support select new faculty at the University of Toronto.
	Best Student Paper, GI 2013
	PhD student Michael Glueck received the *Michael AJ Sweeney Award* for best student paper for our paper, [C.36], below.
	Tactual Labs ($50,000)
	Project funding for startup-sponsored activities in my research lab at the University of Toronto.
	Inventor of the Year, University of Toronto
	Hybrid Systems and Methods for Low-Latency User Input Processing and Feedback.

Dean's Excellence Award, University of Toronto
Awarded to 5% of faculty in division for achievement in each of research, teaching, and service.

2012 **Mitacs Accelerate ($30,000)**
A Data-Driven Approach to Formulating Best Practices for Mobile Games. Project funding for Rebecca Dreezer, M.Sc. in Applied Computing, Uken Games.

Dean's Excellence Award, University of Toronto
Awarded to 5% of faculty in division for achievement in each of research, teaching, and service.

Microsoft Research ($40,000)
Project Funding.

Ministry of Economic Development and Innovation, Ontario Research Fund ($198,000)
User interface feedforward and feedback supporting and enabling ubiquitous computing (provincial matching grant to Canadian Foundation for Innovation, below).

National Science and Engineering Research Council: Discovery Grant Supplement ($5,000)
User interface feedforward and feedback supporting and enabling body tracking technologies.

Autodesk Research ($7,000)
General project funding.

Steven Sanders ($90,000)
Project funding for the *Symphony of Devices.*

Canadian Foundation for Innovation ($198,000)
User interface feedforward and feedback supporting and enabling ubiquitous computing.

2011 **Microsoft Corp. ($30,000)**
Donation of Microsoft Surface equipment.

National Science and Engineering Research Council: Discovery Grant ($145,000)
User interface feedforward and feedback supporting and enabling body tracking technologies.

National Science and Engineering Research Council: Discovery Accelerator Supplement (DAS) ($120,000)
User interface feedforward and feedback supporting and enabling body tracking technologies.
The DAS Program provides substantial and timely resources to a small group of researchers whose research proposals suggest and explore high-risk, novel or potentially transformative concepts and lines of inquiry, and are likely to have impact by contributing to groundbreaking advances in the area.

University of Toronto: Startup Funding ($527,000)
Startup funding for my position at U of T. Mix of unrestricted funds ($100,000), lab renovations ($100,000), and student funding ($327,000).

Association for Computing Machinery: ACM CHI Best Paper Honorable Mention
At ACM CHI 2011 for [C.24] below.

Mitacs Accelerate ($30,000)
Novel 3-D User Interfaces for improved situation awareness and mobile robot control. Project funding for Ben Chan, M.Sc. in Applied Computing, MacDonald Dettwiler and Associates.

2007 **National Science Foundation ($8,000) (authored)**
Tabletop 2007 Student Volunteer Program

National Science Foundation ($20,000) (authored)
ISWC 2007

Harvard University: Initiative in Innovative Computing Fellowship ($15,600)
Research in the design multi-surface, multi-user, multi-touch room for astrophysicists.

2004 **Association for Computing Machinery**
ACM UIST Best Paper Award

Wolfond Fellowship ($10,000)
Partial funding for Ph.D.

University of Toronto Fellowship ($75,000)
 Funding for Ph.D.

2002 **Microsoft Research ($33,000)**
 Project Funding

University of Toronto Fellowship ($26,000)
 Funding for M.Sc.

Innis College Graduating Student Recognition Award

2001 **Hudson's Bay Company Award in Computer Science**

STUDENTS & POST DOCS

Ricardo Jota Costa, PDF

Michael Glueck, Ph.D.

Peter Hamilton, Ph.D.

Haijun Xia, M.Sc.

Rabia Aslam, M.Sc.

Varun Perumal, M.Sc.

Andrew Pelegris, UG

ALUMNI

2014 **Eleni Triantafillou, UG**
 Undergraduate research student.

Benjamin McCanny, UG
 Undergraduate research assistant. See [C.43] below.

Jishuo Yang, M.Sc.
 Research MSc graduate. See [C.40] below.

Peter Hamilton, M.Sc.
 Research MSc graduate. See [C.39] below. Proceeded to PhD program.

2013 **Jay (Zhe) Yu, UG**
 Undergraduate research intern. See [C.43] below.

Eric J.X. Yao, UG
 Undergraduate research intern under NSERC USRA program (2 terms).

Yan Sun, UG
 Undergraduate research intern under NSERC USRA program.

Rebecca Dreezer, M.Sc.A.C.
 Professional MSc graduate, placement at Uken Games.

David Hoon, M.Sc.A.C.
 Professional MSc graduate, placement at Research in Motion.

Benjamin McCanny, UG
 Engineering Science undergraduate thesis student.

Thariq Shihipar, UG
 Engineering Science undergraduate thesis student. See [C.38] below.

Ankith Giliyar Shanthiraj, UG
 Visiting undergraduate research intern, MITACS GlobalLinks program.

2012 **Michael Glueck, M.Sc.**
 MSc graduate. See [C.36] below. Proceeded to PhD program.

Brian Chan, M.Sc.A.C.

Professional MSc graduate, co-advised with Dr. Piotr Jasiobedzki of MacDonald, Dettwiler and Associates Ltd.

Rajavi Shah, UG

Undergraduate research intern (2 terms).

Stephanie Knapp, UG

Undergraduate research intern (2 terms).

Faizan Haque, UG

Undergraduate research intern.

Osman Haque, UG

Undergraduate research intern.

Michael Andreae, UG

Undergraduate research intern.

2010   **Tao Ni, Research Intern (Virginia Tech) @ Microsoft Research**

Co-advised intern at Microsoft Research with Amy Karlson. See [C.25] below.

Shaun Kane, Research Intern (University of Washington) @ Microsoft Research

Co-advised intern at Microsoft Research with Meredith Ringel Morris and Annuska Perkins. See [C.27] below.

Roland Aigner, Research Intern (Upper Austria University of Applied Science) @ Microsoft Research

Co-advised intern at Microsoft Research with Hrvoje Benko. See [C.30] below.

2009   **Dustin Freeman, Research Intern (University of Toronto) @ Microsoft Research**

Co-advised intern at Microsoft Research Hrvoje Benko. See [C.21, P.10, P.16] below.

2007   **Peter Brandl, Research Intern (Upper Austria University of Applied Science) @ Mitsubishi Electric Research Labs**

Co-advised intern at Mitsubishi Electric Research Labs with Chia Shen and Clifton Forlines. See [C.16] below.

Hao Jiang, Research Intern (Tsinghua University) @ Mitsubishi Electric Research Labs

Co-advised intern at Mitsubishi Electric Research Labs with Chia Shen and Clifton Forlines. See [S.5, C.17] below.

2006   **CHI 2006 Student Design Competition**

An undergraduate student group from my fall 2005 offering of CSC318 at the University of Toronto was selected as one of twelve semi-finalists to attend the CHI 2006 student design competition.

2003   **Clarence Chan, Hon. B.Sc.**

Supervised undergraduate research project.

S U P E R V I S O R Y & E X A M I N A T I O N C O M M I T T E E M E M B E R S H I P

Current Supervisory Committee Membership (Others' Students)

Pif Edwards (PhD supervisory committee, University of Toronto)
Dustin Freeman (PhD supervisory committee, University of Toronto)
Aakar Gupta (PhD supervisory committee, University of Toronto)
Sean Hayes (PhD supervisory committee, Vanderbilt University)
Rorik Henrikson (PhD supervisory committee, University of Toronto)
Velian Pendev (PhD supervisory committee, University of Toronto)

Previous Supervisory Roles (Others' Students)

David Holman (PhD examination committee: external examiner, Queens University, 2014)
Ahmed Arif (PhD examination committee: external member, York University, 2013)
Koji Yatani (PhD examination committee, University of Toronto, 2011)
David Dearman (PhD examination committee, University of Toronto, 2011)

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Sync your system to PACER to automate legal marketing.

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