# Nikola Banovic

Curriculum Vitae

January 2018

Human-Computer Interaction Institute
Carnegie Mellon University
5000 Forbes Avenue, Pittsburgh, PA 15213, USA

Email: nbanovic@cs.cmu.edu
Web: http://www.nikolabanovic.net
Citizenship: Canadian

## EDUCATION

Ph.D. in Human-Computer Interaction — 09/2012 – present
Human-Computer Interaction Institute
School of Computer Science
Carnegie Mellon University, Pittsburgh, PA, USA
Thesis: *Computational Method for Understanding Complex Human Routine Behaviors*
Thesis Committee: Prof. Anind K. Dey (Co-chair), Prof. Jennifer Mankoff (Co-chair), Prof. Aniket Kitur, Dr. Eric Horvitz

Master of Science — 09/2010 – 03/2012
Department of Computer Science
University of Toronto, Toronto, Ontario, Canada
Thesis: *Escape-Keyboard: A Sight-free Text Entry Method for Mobile Touch-screen Devices*
Thesis Advisor: Prof. Khai N. Truong

Honours Bachelor of Science — 09/2006 – 06/2010
Department of Computer Science
University of Toronto, Toronto, Ontario, Canada
*Graduated with High Distinction*

Associate in Arts — 01/2001 – 08/2003
Computer Science and Information Systems Department
Santa Monica College, Santa Monica, CA, USA
*Graduated with Honors*

## SCHOLARSHIPS AND AWARDS

| | |
|---|---|
| Honorable Mention Award (CHI '17) | 2017 |
| Honorable Mention Award (CHI '16) | 2016 |
| Yahoo! Fellow | 2015 |
| Honorable Mention Award (MobileHCI '15) | 2015 |
| Best Paper Award (MobileHCI '14) | 2014 |
| NSERC Post-graduate Scholarship | 2013-2016 |
| Wolfond Scholarship in Wireless Information Technology | 2010 |
| NSERC Undergraduate Student Research Award | 2009 |

## PUBLICATIONS

**Journal Articles (Peer Reviewed)**

[J.2] Nikola Banovic and John Krumm. 2017. Warming Up to Cold Start Personalization. *PACM Interact. Mob. Wearable Ubiquitous Technol.*, 1, 4, Article 124 (December 2017), 13 pages.

[J.1] Nikola Banovic, Koji Yatani, and Khai N. Truong. 2013. Escape-Keyboard: A Sight-free One-handed Text Entry Method for Mobile Touch-screen Devices. *International Journal of Mobile Human Computer Interaction (IJMHCI),* Volume 5, Issue 3, 42-61.

**Refereed Conference Papers (Main Proceedings)**

[C.13] Qian Yang, Nikola Banovic, John Zimmerman. 2018. Mapping Machine Learning advances from HCI research to reveal starting places for design research. (To appear) In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (CHI '18). ACM, New York, NY, USA, 11 pages.

[C.12] Nikola Banovic, Anqi Wang, Yanfeng Jin, Christie Chang, Julian Ramos, Anind K. Dey, and Jennifer Mankoff. 2017. Leveraging Human Routine Models to Detect and Generate Human Behaviors. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (CHI '17). ACM, New York, NY, USA, 6683-6694. [25% acceptance rate]

[C.11] Nikola Banovic, Varun Rao, Abinaya Saravanan, Anind K. Dey, and Jennifer Mankoff. 2017. Quantifying Aversion to Costly Typing Errors in Expert Mobile Text Entry. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems* (CHI '17). ACM, New York, NY, USA, 4429-4241. [25% acceptance rate] **Honorable Mention Award**

[C.10] Nikola Banovic, Tofi Buzali, Fanny Chevalier, Jennifer Mankoff, and Anind K. Dey. 2016. Modeling and Understanding Human Routine Behavior. In *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems* (CHI '16). ACM, New York, NY, USA, 248-260. [22% acceptance rate] **Honorable Mention Award**

[C.9] Karen Church, Denzil Ferreira, Nikola Banovic, and Kent Lyons. 2015. Understanding the Challenges of Mobile Phone Usage Data. In *Proceedings of the 17th International Conference on Human-Computer Interaction with Mobile Devices and Services* (MobileHCI '15). ACM, New York, NY, USA, 504-514. **Honorable Mention Award**

[C.8] Nikola Banovic, Christina Brant, Jennifer Mankoff, and Anind K. Dey. 2014. ProactiveTasks: the Short of Mobile Device Use. In *Proceedings of the 16th international conference on Human-computer interaction with mobile devices and services* (MobileHCI '14). ACM, New York, NY, USA, 243-252. [28% acceptance rate] **Best Paper Award**

[C.7] Christian Koehler, Nikola Banovic, Ian Oakley, Jennifer Mankoff, and Anind K. Dey. 2014. Introducing Indoor-ALP: An Adaptive Indoor Location Prediction System. In *Proceedings of the 2014 ACM international joint conference on Pervasive and ubiquitous computing* (UbiComp '14). ACM, New York, NY, USA, 171-181. [16% acceptance rate]

[C.6] Nikola Banovic, Rachel L. Franz, Khai N. Truong, Jennifer Mankoff, and Anind K. Dey. 2013. Uncovering Information Needs for Independent Spatial Learning for Users who are Visually Impaired. In *Proc. of the 15th int. ACM SIGACCESS conf. on Comp. and access.* (ASSETS '13). ACM, New York, NY, USA, Article 24, 8 pages. [29% acceptance rate]

[C.5] Nikola Banovic, Tovi Grossman, and George Fitzmaurice. 2013. The Effect of Time-based Cost of Error in Target-directed Pointing Tasks. In *Proceedings of the 2013 ACM annual conference on Human Factors in Computing Systems* (CHI '13). ACM, New York, NY, USA, 1373-1382. [20% acceptance rate]

[C.4] Nikola Banovic, Tovi Grossman, Justin Matejka, and George Fitzmaurice. 2012. Waken: reverse engineering usage information and interface structure from software videos. In *Proceedings of the 25th annual ACM symposium on User interface software and technology* (UIST '12). ACM, New York, NY, USA, 83-92. [22% acceptance rate]

[C.3] Nikola Banovic, Fanny Chevalier, Tovi Grossman, and George Fitzmaurice. 2012. Triggering triggers and burying barriers to customizing software. In *Proceedings of the 2012 ACM annual conference on Human Factors in Computing Systems* (CHI '12). ACM, New York, NY, USA, 2717-2726. [23% acceptance rate]

[C.2] Koji Yatani, Nikola Banovic, and Khai N. Truong. 2012. SpaceSense: representing geographical information to visually impaired people using spatial tactile feedback. In *Proceedings of the 2012 ACM annual conference on Human Factors in Computing Systems* (CHI '12). ACM, New York, NY, USA, 415-424. [23% acceptance rate]

[C.1] Nikola Banovic, Frank Chun Yat Li, David Dearman, Koji Yatani, and Khai N. Truong. 2011. Design of unimanual multi-finger pie menu interaction. In *Proceedings of the ACM International Conference on Interactive Tabletops and Surfaces* (ITS '11). ACM, New York, NY, USA, 120-129. [34% acceptance rate]

**Doctoral Consortium**

[D.1] Nikola Banovic. 2017. Method for Understanding Complex Human Routine Behaviors from Large Behavior Logs. In *Proceedings of the 2017 CHI Conference Extended Abstracts on Human Factors in Computing Systems* (CHI EA '17). ACM, New York, NY, USA, 254-258.

**Book Chapters**

[B.1] Nikola Banovic, Jennifer Mankoff, and Anind K. Dey. 2018. Computational Model of Human Routine Behaviours. In *Computational Interaction*, Antti Oulasvirta, Per Ola Kristensson, Xiaojun Bi, and Andrew Howes (Eds.). Oxford University Press. 22 pages.

**Invited Articles**

[A.1] Nikola Banovic. 2016. To Replicate or Not to Replicate? *GetMobile: Mobile Computing and Communications Review* 19, 4 (March 2016), 23-27.

## INVITED TALKS

Computational Models of Human Behavior — 06/2017
Dagstuhl Seminar on Computational Interactivity, Germany

Human-Data Driven Interfaces — 03/2017
Computer Science Department, University of Toronto, Toronto, Canada

Human-Data Driven Interfaces — 12/2016
Bosch Research and Technology Center, Pittsburgh, USA

Streamlining Mobile Device Use — 08/2015
DGP, Computer Science Department, University of Toronto, Toronto, Canada

Streamlining Mobile Device Use — 07/2015
DUB, University of Washington, Seattle, USA

## PROFESSIONAL EXPERIENCE

Graduate Research Assistant — 08/2012 – present
Carnegie Mellon University, Pittsburgh, USA

Machine Learning Intern — 05/2016 – 07/2016
Uber Advanced Technologies Center, Pittsburgh, USA
Host: Jeff Schneider

Graduate Teaching Assistant — 08/2015 – 12/2015
Carnegie Mellon University, Pittsburgh, USA — 08/2014 – 12/2014

Research Intern — 05/2015 – 08/2015
Microsoft Research, Redmond, USA
Host: John Krumm

Research Intern — 01/2012 – 09/2012
Autodesk Research, Toronto, Canada — 05/2011 – 09/2011
Hosts: Tovi Grossman & George Fitzmaurice

Graduate Research Assistant — 09/2010 – 12/2011
University of Toronto, Toronto, Canada

Graduate Teaching Assistant — 09/2011 – 12/2011
University of Toronto, Toronto, Canada — 01/2011 – 04/2011
09/2010 – 12/2010

Co-founder and Lead Software Architect — 10/2004 – 12/2009
American Data Company, Los Angeles, USA; Toronto, Canada

Programming Specialist — 07/2002 – 07/2003
Business Data Inc., Los Angeles, USA

## TEACHING

**Lecturer**

Interactive Data Science, 05-839 — Spring 2017
Carnegie Mellon University, Pittsburgh, USA

**Teaching Assistant**

Software Structures for User Interfaces, 05-431|631 — Fall 2015
Carnegie Mellon University, Pittsburgh, USA

User-Centered Research & Evaluation, 05-410|610 — Fall 2014
Carnegie Mellon University, Pittsburgh, USA

CSC318: The Design of Interactive Computational Media — Fall 2011
University of Toronto, Toronto, Canada — Spring 2011
Fall 2010

**Students Mentored**
Rachel Franz (Undergraduate student at Carnegie Mellon University)
Xiaoshan Zhang (Undergraduate student at Carnegie Mellon University)
Christina Brant (Undergraduate student at Carnegie Mellon University)
Abinaya Saravanan (Summer intern at Carnegie Mellon University)
Tofi Buzali (Masters student at Carnegie Mellon University)
Jae-Won Kim (Masters student at Carnegie Mellon University)
Seo Hyun Choo (Undergraduate student at Carnegie Mellon University)
Christie Chang (Undergraduate student at Carnegie Mellon University)
Angie Wang (Undergraduate student at Carnegie Mellon University)
Yanfeng "Tony" Jin (Summer intern at Carnegie Mellon University)
Varun Rao (Summer intern at Carnegie Mellon University)
Yashasavi Hari (Undergraduate student at Carnegie Mellon University)
Ticha Sethapakdi (Masters student at Carnegie Mellon University)
Jiayi Zhao (Undergraduate student at Carnegie Mellon University)
Zhongmin "Angela" Xie (Undergraduate student at Carnegie Mellon University)

## PROFESSIONAL SERVICE

**Associate Chair (AC)**
CHI 2018

**Organizing Committees**
UIST 2017 Publicity Chair • Ubicomp & ISWC 2017 Publicity Co-chair

**Reviewer**
CHI 2011-2018 • MobileHCI 2011, 2013-2016 • UIST 2012-2016 • Int. Journal of Human-Computer Studies 2012-2013 • Pervasive Health 2014 • Human-Computer Interaction (Journal) 2014 • Pervasive and Mobile Computing 2015-2016 • Ubicomp 2015-2016 • CSCW 2016-2017 • IEEE Intelligent Systems 2016 • DIS 2017 • IMWUT 2017-2018 • ISWC 2017 • IEEE Pervasive Computing 2017

**Special Recognitions for Exceptional Reviews (number of recognized review in parenthesis)**
CHI 2015 (1) • CHI 2016 (3) • CHI 2017 (1) • CSCW 2017 (1) • UIST 2014 (1) • UIST 2016 (2)