Nikola Banovic, Ph.D.

Curriculum Vitae
April 2020

Assistant Professor, Electrical Engineering and Computer Science
University of Michigan, Ann Arbor
Beyster Building, 2260 Hayward Street, Ann Arbor, MI 48109

Email: nbanovic@umich.edu
Web: http://www.nikolabanovic.net

EDUCATION

Ph.D. in Human-Computer Interaction — 09/2012 – 08/2018
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

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.3] Nel Escher and Nikola Banovic. 2020. Exposing Error in Poverty Management Technology: A Method for Auditing Government Benefits Screening Tools. *PACM HCI*, 4, CSCW1, Article 64 (May 2020), 20 pages.

[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.15] Nikola Banovic, Ticha Sethapakdi, Yasasvi Hari, Anind K. Dey, and Jennifer Mankoff. 2019. The Limits of Expert Text Entry Speed on Mobile Keyboards with Autocorrect. In *21st International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI '19)*. ACM, New York, NY, USA, 12 pages.

[C.14] Rushil Kurana, Nikola Banovic, Kent Lyons. 2018. In Only 3 Minutes: Perceived Exertion Limits of Smartwatch Use. (To appear) In *Proceedings of the 2018 ACM International Symposium on Wearable Computers* (ISWC '18). ACM, New York, NY, USA.

[C.13] Qian Yang, Nikola Banovic, John Zimmerman. 2018. Mapping Machine Learning advances from HCI research to reveal starting places for design research. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems* (CHI '18). ACM, New York, NY, USA, Paper 130, 11 pages. [26% acceptance rate]

[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]

Workshops Organized

[W.2] Kashyap Todi, Jean Vanderdonckt, Xiaojuan Ma, Jeffrey Nichols, and Nikola Banovic. 2020. AI4AUI: Workshop on AI Methods for Adaptive User Interfaces. In *Proceedings of the 25th International Conference on Intelligent User Interfaces Companion* (IUI '20). ACM, New York, NY, USA, 17–18.

[W.1] Nikola Banovic, Antti Oulasvirta, and Per Ola Kristensson. 2019. Computational Modeling in Human-Computer Interaction. In *Extended Abstracts of the 2019 CHI Conference on Human Factors in Computing Systems* (CHI EA '19). ACM, New York, NY, USA, Paper W26, 7 pages.

Posters & Workshop Papers

[P.1] John Joon Young Chung, Fuhu Xiao, Nikola Banovic, and Walter S. Lasecki. 2019. Towards Instantaneous Recovery from Autonomous System Failures via Predictive Crowdsourcing. In *The Adjunct Publication of the 32nd Annual ACM Symposium on User Interface Software and Technology* (UIST '19). ACM, New York, NY, USA, 16–18.

Dissertation

[D.1] Nikola Banovic. 2018. *Computational Method for Understanding Complex Human Routine Behaviors*. Ph.D. Dissertation. Carnegie Mellon University, Pittsburgh, PA, USA.

Doctoral Consortium

[DC.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 Modeling in Human-Computer Interaction Joint 2019 ICIEV, IVPR, & ABC	06/2019
Computational Models of Human Behavior Dagstuhl Seminar on Computational Interactivity, Germany	06/2017
Human-Data Driven Interfaces Computer Science Department, University of Toronto, Toronto, Canada	03/2017
Human-Data Driven Interfaces Bosch Research and Technology Center, Pittsburgh, USA	12/2016
Streamlining Mobile Device Use DGP, Computer Science Department, University of Toronto, Toronto, Canada	08/2015
Streamlining Mobile Device Use DUB, University of Washington, Seattle, USA	07/2015

SELECT PROFESSIONAL EXPERIENCE

Assistant Professor, Electrical Engineering and Computer Science University of Michigan-Ann Arbor, Ann Arbor, USA	09/2018 – present
Graduate Research Assistant Carnegie Mellon University, Pittsburgh, USA	08/2012 – 08/2018
Machine Learning Intern Uber Advanced Technologies Center, Pittsburgh, USA Host: Jeff Schneider	05/2016 – 07/2016
Graduate Teaching Assistant Carnegie Mellon University, Pittsburgh, USA	08/2015 – 12/2015 08/2014 – 12/2014
Research Intern Microsoft Research, Redmond, USA Host: John Krumm	05/2015 – 08/2015
Research Intern Autodesk Research, Toronto, Canada Hosts: Tovi Grossman & George Fitzmaurice	01/2012 – 09/2012 05/2011 – 09/2011
Graduate Research Assistant University of Toronto, Toronto, Canada	09/2010 – 12/2011
Graduate Teaching Assistant University of Toronto, Toronto, Canada	09/2011 – 12/2011 01/2011 – 04/2011 09/2010 – 12/2010

TEACHING

Lecturer

Human-Computer Interaction, EECS 598 — Winter 2020
University of Michigan, Ann Arbor, USA

Modeling Human Behavior, EECS 498 — Winter 2019
University of Michigan, Ann Arbor, USA

Computational Modeling in HCI, EECS 598 — Fall 2019, Fall 2018
University of Michigan, Ann Arbor, USA

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, Spring 2011, Fall 2010
University of Toronto, Toronto, Canada

Current Students
University of Michigan
Divya Ramesh (PhD candidate)
Kristen Nelson Escher (PhD student)
Anindya Das Antar (PhD student)
Sumit Asthana (PhD student)
Snehal Prabhudesai (PhD student)

Xincheng Huang (Masters student)

Yujian Liu (Undergraduate student)
Yucen Sun (Undergraduate student)
Nan Liu (Undergraduate student)
Renee Li (Undergraduate student)
Enhao Zhang (Undergraduate student)
Alvin Hermans (Undergraduate student)
Zhuoran "Jim" Yang (Undergraduate student)
Keylonnie Miller (Undergraduate student)
Jiankai Pu (Undergraduate student)
Zhipeng Yan (Undergraduate student)

Past Students Mentored
University of Michigan
Anindya Das Antar (PhD student at the University of Michigan)
Sumit Asthana (PhD student at the University of Michigan)
Aditya Ramesh (Masters student at the University of Michigan)
Suraj Kiran Raman (Masters student at the University of Michigan)

Carnegie Mellon University
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)
Kavi Dey (8th Grade Project at the Waldorf School of Pittsburgh)
Julian Ramos (PhD student at Carnegie Mellon University)
Qian Yang (PhD student at Carnegie Mellon University)

PROFESSIONAL SERVICE

Associate Editor (AE)
PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT). 2019-present

Associate Chair (AC)
CHI Conference on Human Factors in Computing Systems (CHI '18, CHI '20)
Graphics Interface (GI '20)
The Web Conference (TheWebConf '20)
Visualization in Data Science (VDS '18, VDS '19)

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

Workshop Organizer
ACM IUI 2020 Workshop on AI Methods for Adaptive User Interfaces
ACM CHI 2019 Workshop on Computational Modeling in Human-Computer Interaction

Reviewer
CHI 2011-2019 • MobileHCI 2011, 2013-2016, 2019 • UIST 2012-2016, 2018 • 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, 2019, 2020 • IMWUT 2017-2019 • ISWC 2017 • IEEE Pervasive Computing 2017 • IEEE Trans. On Mobile Computing 2018 • INTERACT 2019 • SIGGRAPH 2020

Special Recognitions for Exceptional Reviews (number of recognized reviews in parenthesis)
CHI 2015 (1) • CHI 2016 (3) • CHI 2017 (1) • CHI 2019 (3) • CSCW 2017 (1) • INTERACT 2019 (1) • MobileHCI 2019 (1) • IMWUT 2017 (1) • Ubicomp 2016 (2) • UIST 2014 (1) • UIST 2016 (2)