

# Dereck Toker

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## RESEARCH INTERESTS

User-Adaptation and Personalization, Eye Tracking, Information Visualization,  
Machine Learning and Statistical Modeling, Games User Research

## EDUCATION

Ph.D. in Computer Science, University of British Columbia	2013 - 2019 (expected)
M.Sc. in Computer Science, University of British Columbia	2010 - 2013
B.A. Double Major in Philosophy & Computer Science, UBC	2007 - 2010

## EMPLOYMENT

Research Assistant & Teaching Assistant, UBC	Sept. 2010 - present
Analytics Researcher, East Side Games Studio, Vancouver, BC	April 2013 – June 2016

## AWARDS

Sir James Lougheed Award of Distinction	2017, 2018
GRAND Postgraduate Scholar Program	2014 - 2015
Motion Metrics/ICICS Graduate Scholarship	2014
Springer Best Paper Award - UMAP' 14	2014
NSERC Postgraduate Scholarship	2014 - 2016
UBC Four Year Doctoral Fellowship (4YF)	2013 - 2016
Mitacs-Accelerate Graduate Research Internship Award	2013, 2015
UBC Outstanding Graduate Teaching Assistant Award	2011
Electronic Arts Bursary in Computer Science for Outstanding Graduate Students specializing in Interactive Media	2011, 2017

## PUBLICATIONS

(\* indicates conference was attended and publication presented)

### *Strictly Refereed Conference Papers*

1. \* **Toker D.**, Conati C., Carenini G. (2018). "User-adaptive Support for Processing Magazine Style Narrative Visualizations: Identifying User Characteristics that Matter". *Proceedings of IUI 2018*, International Conference on Intelligent User Interfaces, *to appear*, (AR: 23%).
2. Conati C., Lallé S., Rahman, Md. A., and **Toker D.** (2017). "Further Results on Predicting Cognitive Abilities for Adaptive Visualizations". *Proceedings of IJCAI 2017*, International Joint Conference on Artificial Intelligence, p. 1568-1574, (AR: 26%).
3. \* **Toker D.**, Lallé S., and Conati C. (2017). "Pupillometry and Head Distance to the Screen to Predict Skill Acquisition during Information Visualization Tasks". *Proceedings of IUI 2017*, International Conference on Intelligent User Interfaces, p. 221-231, (AR: 23%).

4. \* Birk M., **Toker D.**, Mandryk R., and Conati C., (2015). "Modeling Motivation in a Social Network Game using Player-Centric Traits and Personality Traits". *Proceedings of UMAP 2015*, the 23rd International Conference on User Modeling, Adaptation, and Personalization, p. 18-30, (AR: 29%).
5. Lallé S., **Toker D.**, Conati C., and Carenini G. (2015). "Prediction of Users' Learning Curves for Adaptation while Using an Information Visualization". *Proceedings of IUI 2015*, the 22nd International Conference on Intelligent User Interfaces, p. 357-368, (AR: 23%).
6. \* **Toker D.**, and Conati C. (2014). "Eye tracking to understand user differences in visualization processing with highlighting interventions". *Proceedings of UMAP 2014*, the 22nd International Conference on User Modeling, Adaptation, and Personalization, p. 219-230, (AR: 16%).
7. Steichen B., Wu M., **Toker D.**, Conati C., and Carenini G. (2014). "Te,Te,Hi,Hi: Eye Gaze Sequence Analysis for Informing User-Adaptive Information Visualizations". *Proceedings of UMAP 2014*, the 22nd International Conference on User Modeling, Adaptation, and Personalization, p. 183-194, (AR: 16%), **Springer Best Paper Award**.
8. \* Carenini G., Conati C., Hoque E., Steichen B., **Toker D.**, and Enns J. (2014). "Highlighting Interventions and User Differences: Informing Adaptive Information Visualization Support". *Proceedings of CHI 2014*, ACM SIGCHI Conference on Human Factors in Computing Systems, p. 1835-1844, (AR: 23%).
9. \* **Toker D.**, Steichen B., Gingerich, M., Conati C., and Carenini G. (2014). "Towards Facilitating User Skill Acquisition - Identifying Untrained Visualization Users through Eye Tracking". *Proceedings of IUI 2014*, International Conference on Intelligent User Interfaces, p. 105-144, (AR: 24%), **Runner up for Best Paper Award**.
10. \* **Toker D.**, Conati C., Steichen B. and Carenini G. (2013) "Individual User Characteristics and Information Visualization: Connecting the Dots through Eye Tracking". *Proceedings of CHI 2013*, ACM SIGCHI Conference on Human Factors in Computing Systems, p. 295-304, (AR: 20%).
11. Dawson J., Schneider O., Ferstay J., **Toker D.**, Link J., Haddad D., and MacLean K. (2013). "It's alive!: exploring the design space of a gesturing phone". *Proceedings of Graphics Interface 2013* (GI '13). Canadian Information Processing Society, p. 205-212. (AR: 38%)
12. \* **Toker D.**, Conati C., Carenini G. and Haraty M. (2012). "Towards Adaptive Information Visualization: On the Influence of User Characteristics". *Proceedings of UMAP 2012*, the 20th International Conference on User Modeling, Adaptation, and Personalization. Springer LNCS 7379, p. 274-285, (AR: 29%).

#### *Journal Papers*

13. Conati C., Carenini G., Hoque E., Steichen B. and **Toker D.** (2014). "Evaluating the impact of user characteristics and different layouts on an interactive visualization for decision making". *Computer Graphics Forum* (EuroVis 2014), p. 371-380.

#### *Workshop, Poster, & Other Papers*

14. \* **Toker D.**, Conati C. (2017). "Leveraging Pupil Dilation Measures for Understanding Users' Cognitive Load During Visualization Processing". *Proceedings of UMAP 2017*, *HAAPIE*: Adjunct Publication of the 25th Conference on User Modeling, Adaptation and Personalization, p.267-270.
15. Conati C., Carenini G., **Toker D.**, and Lallé S. (2015). "Towards User-Adaptive Visualization". *Proceedings of the Twenty-Ninth AAI Conference on Artificial Intelligence - Senior Track*, p. 4100-4106.
16. \* **Toker D.**, Steichen, B., and Birk M. (2014). "Predicting Player Type in Social Network Games". *Proceedings of UMAP 2014*, the 22nd International Conference on User Modeling, Adaptation, and Personalization, p.37-40

17. Conati C., Hoque E., **Toker D.**, and Steichen B. (2013). "When to Adapt: Detecting User's Confusion During Visualization Processing". *Proceedings of the 1st International Workshop on User-Adaptive Information Visualization (WUAV 2013)*, in conjunction with the 21st conference on User Modeling, Adaptation and Personalization (UMAP 2013), p.17-24.

## RESEARCH COMMUNITY SERVICE

### *Program Committee*

ACM Symposium on Eye Tracking Research & Applications (ETRA) 2019

### *External Reviewer*

ACM Symposium on Eye Tracking Research & Applications (ETRA) 2018

ACM Journal: Transactions on Applied Perception (TAP) 2017

ACM Graphics Interface (GI) 2016

ACM SIGCHI Conference on Intelligent User Interfaces (IUI) 2015, 2018

ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) 2015, 2016, 2017

ACM SIGCHI Nordic Conference on Human Factors in Computing Systems (NordiCHI) 2014

ACM SIGCHI Conference on Computer-Human Interaction in Play (CHI Play) 2014, 2015, 2017

### *Student Volunteer*

Administrator of participant recruitment website: [www.reservax.com/hciatubc](http://www.reservax.com/hciatubc) 2014-present

GRAND HQP - "Spend a Week at SIGGRAPH" Program: Connecting with young people 2014

ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) 2013

International Conference on User Modeling, Adaptation, and Personalization (UMAP) 2014, 2015

## VOLUNTEER SERVICE

INKspire.org – User Acquisition & Analytics Researcher Jan. 2017 - present

Hearthstone Deck Tracker – Data Scientist 2017

Volunteer Speaker - Full Indie game developers, Vancouver July 2015

Volunteer Programmer, CiTR 101.9 UBC Campus Radio Station July 2012 – Sep. 2013

Volunteer Database Management, Artists' Legal Outreach (ALO) Nov. 2009 - May 2010

## TEACHING

*Teaching Assistant - Department of Computer Science, UBC*

CPSC 317 - *Internet Computing* Spring 2011

CPSC 311 - *Definition of Programming Languages* Fall 2010