

Velian Pandeliev

CURRICULUM VITAE

EDUCATION

Ph.D. – Computer Science, Human-Computer Interaction
University of Toronto

- Ph.D. thesis supervisor: Dr. Ronald M. Baecker
- Recipient of Wolfond Scholarship in Wireless Information Technology (2011)
- Projected completion date April 2015

M.Sc. – Computer Science, Human-Computer Interaction
University of Toronto

Master's Project: "*A portal for the online evaluation of serious games*"

- Master's project supervisor: Dr. Ronald M. Baecker
- Holder of Ontario Graduate Scholarship (2009-2010)
- Completed May 2011

B.A. – Cognitive Science, Cognition and Computation Stream – Co-op option
Carleton University

Honours Project: "*The effects of visual and auditory information processing in simple and complex driving scenarios*"

- Graduated with Highest Honours (August 2009)
- Honours project supervisor: Dr. Chris Herdman, ACE Lab
- Recipient of Senate Medal for Outstanding Academic Achievement
- Holder of NSERC Undergraduate Student Research Award (2005, 2006)
- Semester abroad at University of Edinburgh (Sep-Dec 2007)

Research Interests

Digital reading devices and responsive reading, interaction design, technology for special populations, e-books and accessibility, technology for the elderly to combat cognitive decline and social isolation, supporting cognition throughout the life course, integration of technology into education and training, design and evaluation of cognition-assisting applications, operator attention and distraction, mathematical cognition.

Research Background

Technologies for Aging Gracefully Lab, University of Toronto

- Master's project consisted of creating Tangra - a prototype for conducting randomized control trial experiments using a Web portal, specifically as applied to mental fitness and aging. The prototype was further developed and is being used by Prof. Yaakov Stern at Columbia University Medical Center.
- Spent a summer working on a pre-release version of the ALLT (Accessible Large-Print Listening and Talking) E-book: an accessible reading application for the iPad that extended the benefits of traditional large-print and audiobooks with in situ recording and playback of the reader's voice.
- Submitted a prototype educational game called Co-ordinary Heroes to the

- inaugural Disney Research Learning Challenge at SIGGRAPH 2010.
- Completed the following course project prototypes: a project on passive tactile overlays for eyes-free operation of iOS touch screen interfaces (individually), an intuitive audio transcription interface (in pairs), and a SNP detection add-on for the Savant genome browser (in pairs).

Aviation and Cognitive Engineering Lab, Carleton University

- Completed Honours thesis on the effect of textual information presentation on attention and distraction in simulated driving at the Advanced Cognitive Engineering Laboratory at Carleton University
- Programmed an XNA prototype testing application as a low-fidelity proxy for driving ability in a lab study. Participants had to keep a marker within a boundary on a 1-D track by using an Xbox 360 steering wheel.
- Participated in building a three-screen flight simulator from the body of a Cessna 172 airplane.

Centre for Advanced Cognitive Research, Carleton University

- Helped program and conducted studies on mathematical cognition, notably on the effects on response time and accuracy of presenting simple arithmetic problems in words (“four + six”) and in nonsensical homophones (“fowr + siks”).

Projects & Publications

- **Pandeliev, V.** & Baecker, R. (2011, May). Evaluating Mental Fitness Interventions. Poster presentation at GRAND 2011 Conference, Vancouver, BC.
- **Pandeliev, V.** & Levy, A. (2010, July). Co-Ordinary Heroes: A Coordinate Geometry Learning Game. Finalist for the Disney Research Learning Challenge, SIGGRAPH 2010, Los Angeles, CA.
- **Pandeliev, V.** & Baecker, R. (2010, May). A Framework for the Online Evaluation of Games for Health. Poster at Games for Health 2010 Conference, Boston, MA.
- **Pandeliev, V.** & Baecker, R. (2010, May). A Framework for the Online Evaluation of Serious Games. Proceedings of the International Academic Conference on the Future of Game Design and Technology, Vancouver, BC.
- Roberts, M. A., LeFevre, J., Penner-Wilger, M., & **Pandeliev, V.** (2006, November). Fowr + Siks: Pseudohomophones and the impact of phonological codes in solving simple arithmetic problems. Accepted for presentation at the annual meeting of the *Psychonomic Society*, Houston, TX.

TEACHING/LEADERSHIP EXPERIENCE

- Contract instructor for the University of Toronto Computer Science department, developed own notes and taught:
 - **Introduction to Computer Programming (CSC108H):** Structure of computers; the computing environment. Programming in Python. Program structure: elementary data types, statements, control flow, functions, classes, objects, methods, fields. Lists; searching, sorting and complexity.
 - **Introduction to Computer Science (CSC148H):** Abstract data types and data structures for implementing them. Linked data structures. Encapsulation and information-hiding. Object-oriented programming. Specifications. Analyzing the efficiency of programs. Recursion. This course assumes programming experience in Python
- Teaching Assistant – Mathematical Expressions and Reasoning (CSC165H), Introduction to Computer Programming (CSC108H), Introduction to Computer Science (CSC148H)
- Instructor for the Association for Bright Children of Ontario, taught courses on math, cryptography, drama, board game creation and programming
- Co-organizer of Kangaroo Mathematical Contest in Canada

SKILLS AND ABILITIES

Technical/Analytical Skills

- Experience with a wide variety of programming languages and platforms: Python, iOS, C#, Java, Scheme, C++
- Intermediate proficiency with Web programming, network operations and server architecture – HTML/CSS, JavaScript/JQuery, Django, LAMP servers
- Proficiency with qualitative and quantitative research methods, conducting heuristic evaluations and user focus groups, surveys and evaluation studies for user interfaces and products
- Knowledge of data structures and algorithms, object-oriented design principles, robotics, assembly level programming and CPU design

Communication Skills

- Published and presented abstracts, short papers and posters at multiple conferences, as well as Research in Action days, open houses and departmental demos at the University of Toronto.
- Led one of the sixteen finalist projects in the inaugural 2010 Disney Research Learning Challenge at SIGGRAPH 2010, Los Angeles, CA.
- Participated in multiple open houses and demos in TAGLab and ACE Lab to faculty, investors and visitors.
- Fluent in English (incl. technical and mathematical English) and Bulgarian, intermediate proficiency in French, rudimentary Spanish and Russian.

WORK EXPERIENCE

Course Instructor – CSC108, CSC148

Department of Computer Science
University of Toronto, St. George Campus (Toronto, ON, Canada)

Sep-Dec 2012
Jan-Apr 2012
Jan-Apr 2011

Lab Manager/Systems Administrator

Technologies for Aging Gracefully Lab
University of Toronto, St. George Campus (Toronto, ON, Canada)

Nov 2010 – present

Teaching Assistant – CSC108, CSC148, CSC165

Department of Computer Science
University of Toronto, St. George Campus (Toronto, ON, Canada)

Sep-Apr 2010

Instructor

ABC Take-Off Program
Association for Bright Children of Ontario (Ottawa, ON, Canada)

Fall 2008
Spring 2009

ICN Technical Support

Communications and Library Services Division
Statistics Canada (Ottawa, ON, Canada)

May 2008-Apr 2009

Simulation Support Technician

Advanced Cognitive Engineering Laboratory
Carleton University (Ottawa, ON, Canada)

May-Aug 2007
Jan-Aug 2008

Research Assistant

Centre for Applied Cognitive Research
Carleton University (Ottawa, ON, Canada)

May-Aug 2005
May-Aug 2006