Natural Sciences and Engineering Research Council of Canada | Conseil de recherches en sciences naturelles et en génie du Canada

FORM 100
Personal Data Form
PART I

Date: 2013/06/14

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Stuerzlinger	Wolfgang	W	Valid 220351

☐ I hold a faculty position at an eligible Canadian college (complete Appendices B1 and C)

☐ I do not or will not hold an academic appointment at a Canadian postsecondary institution

Place of employment other than a Canadian postsecondary Institution (give address in Appendix A)

APPOINTMENT AT A POSTSECONDARY INSTITUTION

Title of position: Professor

Department: Computer Science and Engineering

Campus: Keele

Canadian postsecondary institution:

Tenured or tenure-track academic appointment — Yes [X] No [ ]

Part-time appointment [ ] Full-time appointment [X]

- For all non-tenured or non tenure-track academic appointment and Emeritus Professors, complete Appendices B & C
- For life-time Emeritus Professor and part-time positions, complete Appendix C

ACADEMIC BACKGROUND

Degree	Name of discipline	Institution	Country	Date yyyy/mm
Dipl.-Ing.	Computer Science (Informatik)	Technische Universitat of Vienna	AUSTRIA	1989 / 11
Doctorate	Computer Science (Informatik)	Technische Universitat of Vienna	AUSTRIA	1993 / 04

TRAINING OF HIGHLY QUALIFIED PERSONNEL

Indicate the number of students, fellows and other research personnel that you:

	Currently		Over the past six years (excluding the current year)		
	Supervised	Co-supervised	Supervised	Co-supervised	Total
Undergraduate	3		48	4	55
Master's	2	1	10		13
Doctoral	2		5		7
Postdoctoral	1		1	1	3
Others			2		2
Total	8	1	66	5	80

Personal information collected on this form and appendices will be stored in the Personal Information Bank for the appropriate program.
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ACADEMIC, RESEARCH AND INDUSTRIAL EXPERIENCE (use one additional page if necessary)

Position held (begin with current)	Organization	Department	Period (yyyy/mm to yyyy/mm)
Professor	York	Computer Science and Engineering	2010/12
Visiting Researcher	University of Canterbury, Christchurch, New Zealand	HITLab NZ	2011/11 to 2012/03
Visiting Researcher	Univ. Paris-Sud, Technical Univ. Munich, Univ. Magdeburg		2005/02 to 2005/04
Associate Professor	York University	Computer Science & Engineering	2003/07 to 2010/12
Dozent (Adjunct Associate Professor)	Johannes Kepler University, Linz,	Technical Computer Science and Telematic	2000/12 /
Assistant Professor	York University	Computer Science	1998/09 to 2003/06
Visiting Scholar	University of North Carolina in Chapel Hill, USA	Computer Science	1997/01 to 1998/03
Research Assistant Professor	Johannes Kepler Universitaet Linz, Austria	Computer Science	1995/02 to 1998/08
Assistant (research, teaching, admin)	Johannes Kepler Universitaet Linz, Austria	Computer Science	1992/10 to 1995/01

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Valid 220351	Stuerzlinger

ACADEMIC, RESEARCH AND INDUSTRIAL EXPERIENCE (use one additional page if necessary)

Position held (begin with current)	Organization	Department	Period (yyyy/mm to yyyy/mm)
Consultant	RZL Computer Software, Austria		1991/01
Assistant (research, teaching, admin)	Technische Universitaet of Vienna, Austria	Computer Science	1991/01 to 1992/09
Head of Programming	RZL Computer Software, Austria		1984/07 to 1990/12

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Canada

Personal identification no. (PIN)	Family name
Valid 220351	Stuerzlinger

RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)

List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.

a) Support held in the past 4 years

W. Stuerzlinger	Enhanced Software Tools for the Early 3D Design Process NSERC Discovery Grant 50 hours/month	28,000 28,000 28,000 28,000 28,000	2007 2008 2009 2010 2011
M. Baljko & W. Stuerzlinger	Transducis: the Interface Between the Real and the Virtual York CONCERT Research Grant Internal 20 hours/month	107,000 (25%) 107,000 (25%) 107,000 (25%) 107,000 (25%)	2008 2009 2010 2011
M. Baljko & W. Stuerzlinger	Transducis: the Interface Between the Real and the Virtual Ontario Ministry of Research & Innovation PDF (Post doctoral Fellowships) 10 hours/month	50,000 (50%) 50,000 (50%)	2008 2009
R. Allison, W. Stuerzlinger & 1 other	Stereoscopic Gaze Contigent Display NSERC Research Tools and Instruments	51,350 (10%)	2009

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List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.

a) Support held in the past 4 years

J. Murray & 13 others, including W. Stuerzlinger	Project VERUS: Virtual Environment Real User Study IARPA Reynard Program 10 hours/month	2,000,000 (1%) 1,000,000 (1%)	2010 2011
A. Hogue & 8 others, including W. Stuerzlinger	Interactive Games Ontario 3D (iGO3D) OMDC Entertainment and Creative Cluster Partnerships 10 hours/month	425,000 (2%) 210,000 (2%)	2011 2012
W. Stuerzlinger	Touch the Third Dimension: Simple-To-Use Three-Dimensional User Interfaces NSERC Discovery Grant 50 hours/month	14,000	2012

b) Support currently held

M. Goodale & 10 others, including W. Stuerzlinger	NSERC CREATE Program in Computational Approaches in Neuroscience - Action, Control & Transformations (CAN-ACT) NSERC Collaborative Research and Training Experience 10 hours/month	150,000 (5%) 300,000 (5%) 300,000 (5%) 300,000 (5%) 300,000 (5%)	2009 2010 2011 2012 2013

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RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)

List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.

b) Support currently held

A. Asif & 37 others, including W. Stuerzlinger	Centre for Innovation in Information Visualization and Data Driven Design (CIV/DDD) Ontario Ministry of Research and Innovation Ontario Research Fund Research Excellence 10 hours/month	765,000 (1%) 765,000 (1%) 765,000 (1%) 765,000 (1%) 765,000 (1%)	2010 2011 2012 2013 2014
K. Booth & 49 others, including W. Stuerzlinger	Graphics, Animation, and New Media (GRAND) Canada Networks of Centres of Excellence NCE 50 hours/month	4,650,000 (2%) 4,650,000 (2%) 4,650,000 (2%) 4,650,000 (2%) 4,650,000 (2%)	2010 2011 2012 2013 2014
W. Stuerzlinger & 2 others	3D Haptic Workstation for Research into 3D Manipulation and Sensorimotor Integration NSERC Research Tools and Instruments 20 hours/month	115,599 (100%)	2011

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Highly Qualified Personnel (HQP)

Provide personal data about the HQP that you currently, or over the past six years, have supervised or co-supervised.

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Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
De Mendonca,	Undergraduate (Completed)	Supervised 2013 -	Statistical analysis methods for user studies	Science without Borders student from Brazil
Nywton, Dayson	Undergraduate (In Progress)	Supervised 2013 -	Software for a novel virtual reality system	Science without Borders student from Brazil
Pavlovych, Andriy	Postdoctoral (In Progress)	Supervised 2013 -	Characterizing Haptic Interaction Performance	Postdoc
Srulovich, Goldie	Undergraduate (In Progress)	Supervised 2013 -	Characterizing 3D Free-Air Pointing	NSERC USRA student
Bergmanis, Paul	Master's (In Progress)	Co-supervised 2012 -	TBA	MSc student at York
Brown, Michelle	Master's (In Progress)	Supervised 2012 -	TBA	MSc student at York
Papoi, Domi	Master's (In Progress)	Supervised 2012 -	TBA	Part-time MSc student at York
Mohaghegh, Navid	Doctoral (In Progress)	Supervised 2011 -	TBA	PhD student at York
Zaman, Loutfouz	Doctoral (In Progress)	Supervised 2010 -	Versioning and Histories	PhD student at York
Scheurich, Doug	Master's (Completed)	Supervised 2011 - 2013	Object Rotation and Navigation in 3D Virtual Environments	MSc student at York
Agarwal, Bahvna	Master's (Completed)	Supervised 2008 - 2013	Widget Lens: Interaction Through A Looking Glass	Developer at Digital Media company
Teather, Rob	Doctoral (Completed)	Supervised 2008 - 2013	Evaluating 3D Pointing Techniques	Sessional instructor
Arif, Ahmed	Doctoral (Completed)	Supervised 2006 - 2013	Reducing the Impact of Errors in Text Entry	Sessional instructor
Das, Arindam	Doctoral (Completed)	Supervised 2005 - 2013	ACT-R Models for Learning of Interactive Layouts	Software developer
(Name withheld)	Undergraduate (Completed)	Supervised 2010 - 2011	New Snapping Techniques for Drawing	IT specialist for large university
Iltisberger, Benedikt	Res. Associate (In Progress)	Supervised 2010 - 2011	New Mobile Text Entry Methods	MSc student at Bonn-Rhein-Sieg
Mohaghegh, Navid	Res. Associate (Completed)	Supervised 2010 - 2011	Wireless Technology for Multi-user Input Devices	PhD student at York
Pintilie, Grigori	Postdoctoral (Completed)	Co-supervised 2010 - 2011	User Interfaces for 3D Reconstruction	Senior Research Associate at Univ. of Toronto
Shuralyov, Dmitri	Master's (Completed)	Supervised 2009 - 2011	Advanced 3D Manipulation Methods	Software developer
Dehmeshki, Hoda	Doctoral (Completed)	Supervised 2004 - 2011	Perception-Based Selection Techniques	User Experience Lead at CIBC

Highly Qualified Personnel (HQP)

Provide personal data about the HQP that you currently, or over the past six years, have supervised or co-supervised.

Personal identification no. (PIN)	Family name
Valid 220351	Stuerzlinger

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Pavlovych, Andriy	Doctoral (Completed)	Supervised 2003 - 2011	Investigation of Latency and Jitter on Pointing Motions	was postdoc at Univ. of Sasketchawan
Kalra, Ashish	Undergraduate (Completed)	Supervised 2010 - 2010	Differencing and Merging in Versioning	Software engineer at Indian bank
Patel, Kapil	Undergraduate (Completed)	Supervised 2010 - 2010	Simulation of a New 3D Tracking System	last known: BSc student at York
(Name withheld)	Undergraduate (Completed)	Supervised 2009 - 2010	Robotic Calibration of MULTI	BASc student at York
Ashtiani, Behrooz	Master's (Completed)	Supervised 2008 - 2010	2D & 3D Rigid Object Transformation on Multi-Touch	Software developer at IBM
Zaman, Loutfouz	Master's (Completed)	Supervised 2005 - 2010	User Interfaces for Copying and Cloning of Objects	PhD student at York
(Name withheld)	Undergraduate (Completed)	Supervised 2009 - 2009	Simulating Pressure Sensitivity for Mobile Phone Text Entry	Senior Digital Marketing Executive in tourism industry
Bhakar, Sushil	Postdoctoral (Completed)	Supervised 2009 - 2009	Next Best View for 3D Reconstruction	Teaching Fellow at Concordia
(Name withheld)	Undergraduate (Completed)	Supervised 2008 - 2009	ENG 4000 Group Project: Wireless Multi-User Laser	last known: BASc student at York
(Name withheld)	Undergraduate (Completed)	Supervised 2008 - 2009	Distinguishing multiple laser pointers as input devices	IT specialist at major university
(Name withheld)	Undergraduate (Completed)	Supervised 2008 - 2009	ENG 4000 Group Project: Wireless Multi-User Laser	last known: BASc student at York
(Name withheld)	Undergraduate (Completed)	Supervised 2008 - 2009	ENG 4000 Group Project: Wireless Multi-User Laser	Problem Management Analyst at major IT company
(Name withheld)	Undergraduate (Completed)	Supervised 2008 - 2009	ENG 4000 Group Project: Wireless Multi-User Laser	Technical Resolution Analyst at major IT company
Dagardi, Darius	Master's (Completed)	Supervised 2005 - 2009	Versioning and Merging Methods for Text and Diagrams	Company founder
(Name withheld)	Undergraduate (Completed)	Supervised 2008 - 2008	Suggestions for better 2D Drawing User Interfaces	Technical specialist at major bank
Kuhn, Alexander	Undergraduate (Completed)	Supervised 2007 - 2008	New Mesh Editing Methods	PhD student at University of Magdeburg, Germany
Teather, Rob	Master's (Completed)	Supervised 2005 - 2008	Comparing 2D and 3D Direct Manipulation Interfaces	PhD student at York
Scoditti, Adriano	Master's (Completed)	Supervised 2006 - 2007	A New Layout Method for Graphical User Interfaces	CAD Engineer at ST Microelectronics
Phillips, Dustin	Master's (Completed)	Supervised 2005 - 2007	Improved Text Selection Techniques	Independent Software Developer, Book Author
Tumanov, Olexiy	Master's (Completed)	Supervised 2001 - 2006	Variability-Aware Latency Amelioration in Distributed Env.	PhD Student at CMU

My research focuses on 3D User Interfaces, Human-Computer Interaction, and Virtual Reality. Parts of it have been published in high-impact venues such as ACM CHI, UIST, SIGGRAPH, and IEEE VR. In spring 2013, Google Scholar identified more than 2550 citations of my work, with an h-index of 25. In my recent work, [38] with more than 88 citations in 6 years and [31] with more than 35 in 4 years are most noteworthy. Another indication of my success is coverage in TV, newspapers, and York videos. I have given several keynotes and many talks, including at the Royal Canadian Institute and TEDx. Also, I am participating in several start-up companies. Finally, I am a member of the *Board of Directors* of the Graphics, Animation, and New Media Network of Centres of Excellence (GRAND NCE).

II.1 Most Significant Research Contributions

Recent accomplishments include:

- Presenting the first model for the time-cost of error correction in text entry [26], based on a study about performance metrics in this area [27]. This is a major step forward towards a quantification of the speed-accuracy trade-off inherent in all text entry technologies. Recent work has presented new innovations for nomadic text entry [17]. Other efforts yielded a first model for the text entry learning process, which faithfully predicts the transition from novices to experts [12][24][36].
- Funded by an NSERC Strategic Grant and together with others from UBC, York, and McGill, Dr. Stuerzlinger investigated a new kind of electronic display, first published at SIGGRAPH 2004, cited 350+ times. All previously available visual display systems had fundamental limitations in the range of light levels that can be displayed. The new High Dynamic Range display (originating at UBC) has the unprecedented capability of generating visual stimuli that are much more vivid than conventional systems. The start-up was sold to Dolby. Many patents for this technology have appeared in the last six years. My work also presented the first High Dynamic Range projection system.
- Development of a new algorithm for combating the harmful effects of variable delays in distributed systems. Most networks exhibit significant variation in transmission delays. Humans can adapt to constant delays, but cannot deal well with variations in lag [20][29]. The new predictive latency compensation scheme evens out these variations in an optimal manner [37]. One prominent application area is tele-operation and I am now starting to evaluate my compensation technology in this context. Poses may be measured by my 6D tracking technology, which is more accurate and robust than current commercial technologies [5][18]. Co-funded via NSERC Discovery grant.
- Accurate quantification of pointing performance yields fundamental insights into 2D and 3D user interfaces. My group has performed different studies in 2D pointing, tracking, and object movement [19][20] and 3D pointing [9][13][14][15][22][28][34]. This includes accurate measurements of the negative effects of lag/latency on interaction [20][29][31], especially important for games. The publications have already been cited more than 100 times since 2009. Co-funded by NSERC Discovery grant.
- Publishing a new class of interaction techniques that make interaction with 3D virtual environments much more intuitive. Content creation for 3D graphics applications, such as interior design or the generation of animations, is labor-intensive. Today's software provides limited aid. Stuerzlinger's work contributes intuitive and quick interaction techniques for 3D creation and positioning. This enables naïve users to use Virtual Reality systems productively. The results document that the systems are fast to learn, easy to use, compare favorably with sketching and even foster creativity [2][3][4][6][10][16][35]! More than 400 citations refer to the whole volume of my work on this topic. At the IEEE 3D UI Contest 2011, my group presented the fastest method to interact with a 3D puzzle [**D. Shuralyov**, W. Stuerzlinger, A 3D Desktop Puzzle Assembly System, IEEE 3D UI Symposium 2011, 141-142]. Funded mainly by NSERC Discovery grant.

II.2 Refereed Research Contributions in last 6 years

I am the primary contributor for most of the publications in terms of the fundamental ideas, their general development, as well as the final presentation of the work. Student authors usually implement the ideas, perform the majority of the experimental work and data analysis, and prepare a first version of the write-up under my guidance. My group published several papers in high-impact venues, such as ACM CHI, UIST, and IEEE VR. Other contributions were sent to lesser-impact venues for networking and to enable students to gain experience in paper preparation and presentation. Below funding sources are indicated inside curly brackets. 'D' signifies my Discovery grant.

Names in **bold** indicate graduate students. Undergraduates are also **underlined**.

- Articles in refereed journals. Special issues edited not listed.

[1] G. Pintilie, W. Stuerzlinger, An Evaluation of Interactive and Automated Next Best View Methods in 3D Scanning, *Computer-Aided Design and Applications*, 10(2) 279-291, 2013. {MRI,York}

[2] **V. McArthur**, **R. Teather**, W. Stuerzlinger, Examining 3D Content Creation Interfaces in Virtual Worlds, *Journal of Gaming & Virtual Worlds*, 2(3), 239-258, Dec. 2010. {GRAND}

[3] D. Bowman, S. Coquillart, B. Fröhlich, M. Hirose, Y. Kitamura, K. Kiyokawa, W. Stuerzlinger, 3D User Interfaces: New Directions and Perspectives, *IEEE CG&A,* 28(6), 20-36, Nov 2008. {D}

[4] W. Stuerzlinger, **L. Zaman**, **A. Pavlovych**, **J.-Y. Oh**, The Design and Realization of CoViD, A System for Collaborative Virtual 3D Design, *Virtual Reality*, 10(2), 135-147, Oct. 2006. {D}

[5] **A. Vorozcovs**, W. Stuerzlinger, **A. Hogue**, R. Allison, The Hedgehog: A Novel Optical Tracking Method for Spatially Immersive Displays, *Presence*, 15(1), 108-121, 2006. {D}

10 more journal papers appeared prior to 2006.

- Articles in edited books. Proceedings edited not listed, see conferences chaired.

[6] W. Stuerzlinger, **C. Wingrave**, The Value of Constraints for 3D User Interfaces, Virtual Realities: Dagstuhl Seminar 2008, Springer Verlag, 203-224, Jan. 2011. {Virginia Tech}

- *Selected* papers in refereed conference proceedings. *Extended abstracts and posters not listed.*

[7] **C. Zeidler**, W. Stuerzlinger, C. Lutteroth, G. Weber, The Advanced Layout Editor: An Improved GUI Layout Specification Process, *UIST 2013*, 10 pages, conditionally accepted, Oct. 2013. {NZ}

[8] **B. Agarwal**, W. Stuerzlinger, WidgetLens: A System for Adaptive Content Magnification of Widgets, *British HCI 2013*, 10 pages, Sept. 2013. {GRAND}

[9] G. Bruder, F. Steinicke, W. Stuerzlinger, Touching the Void Revisited: Analyses of Touch Behavior On and Above Tabletop Surfaces, *INTERACT 2013*, to appear, Sept 2013. {Germany}

[10] **D. Scheurich**, W. Stuerzlinger, A One-Handed Multi-Touch Method for 3D Rotations, *INTERACT 2013*, 14 pages, Sept 2013. {iGo3D, GRAND}

[11] **C. Zeidler**, C. Lutteroth, W. Stuerzlinger, G. Weber, Evaluating Direct Manipulation Operations for Constraint-Based Layout, *INTERACT 2013*, to appear, Sept 2013. {NZ}

[12] **A. Das**, W. Stuerzlinger, Unified Modeling of Proactive Interference and Memorization Effort: A new mathematical perspective within ACT-R theory, *CogSci 2013*, to appear, July 2013. {York}

[13] G. Bruder, F. Steinicke, W. Stuerzlinger, To Touch or not to Touch? Comparing 2D Touch and 3D Mid-Air Interaction on Stereoscopic Tabletop Surfaces, *ACM SUI 2013*, to appear, July 2013.

[14] **R. Teather**, W. Stuerzlinger, Pointing at 3D Target Projections with One-Eyed and Stereo Cursors, *CHI 2013*, 159-168, April 2013. {iGo3D, GRAND}

[15] G. Bruder, F. Steinicke, W. Stuerzlinger, Effects of Visual Conflicts on 3D Selection Task Performance in Stereo. Display Environments, *IEEE Symp. on 3D User Interfaces*, 115-118, 2013.

[16] H.-N. Liang, **C. Williams**, M. Semegen, W. Stuerzlinger, P. Irani, User-defined Surface+Motion Gestures for 3D Manipulation of Objects at a Distance through a Mobile Device, *APCHI*, 299-308, 2012. {Univ. of Manitoba, GRAND}

[17] **A. S. Arif**, **B. Iltisberger**, W. Stuerzlinger, Extending Mobile User Ambient Awareness for Nomadic Text Entry, *OzCHI 2011*, 21-30, Nov. 2011. {D, York}

[18] **K. Patel**, W. Stuerzlinger, Simulation of a Virtual Reality Tracking System, *IEEE VECIMS*, 78-83, Sept. 2011. {unfunded}

[19] **B. Ashtiani**, W. Stuerzlinger, 2D Similarity Transformations on Multi-Touch Surfaces, *Graphics Interface*, 57-64, May 2011. {York, D, GRAND}

[20] **A. Pavlovych**, W. Stuerzlinger, Target Following Performance in the Presence of Latency, Jitter, and Signal Dropouts, *Graphics Interface*, 33-40, May 2011. {GRAND}

[21] **L. Zaman**, **A. Kalra**, W. Stuerzlinger, The Effect of Animation, Dual-View, Difference Layers and Relative Re-Layout in Hierarchical Diagram Differencing, *Graphics Interface*, 183-190, May 2011. {GRAND}

[22] **R. Teather**, W. Stuerzlinger, Pointing at 3D Targets in a Stereo Head-Tracked Virtual Environment, *IEEE Symposium on 3D User Interfaces*, 87-94, Mar. 2011. {iGo3D, York}

[23] **D. Dadgari**, W. Stuerzlinger, Novel User Interfaces for Diagram Versioning and Differencing, *British HCI*, 62-71, Sept. 2010. {Transducis}

[24] **A. Das**, W. Stuerzlinger, Proactive Interference in Location Learning: A New Closed-Form Approximation, *ICCM 2010*, 37-42, Aug. 2010. {Transducis}

[25] **L. Zaman**, W. Stuerzlinger, A New Interface for Cloning Objects in Drawing Systems, *Graphics Interface*, 27-34, May 2010. {D}

[26] **A. S. Arif**, W. Stuerzlinger, Predicting the Cost of Error Correction in Character-Based Text Entry Technologies, *ACM CHI*, 5-14, April 2010. {D, York}

[27] **A. S. Arif**, W. Stuerzlinger, Analysis of Text Entry Performance Metrics, *IEEE Symposium on Human Factors and Ergonomics*, 100-105, Sept. 2009. {York, D}

[28] **R. Teather**, R. Allison, W. Stuerzlinger, Evaluating Visual/Motor Co-location in Fish-Tank Virtual Reality, *IEEE Symp. on Human Factors and Ergonomics*, 624-629, Sept. 2009. {CAN-ACT}

[29] **A. Pavlovych**, W. Stuerzlinger, The Tradeoff between Spatial Jitter and Latency in Pointing Tasks, *ACM Symp. on Engineering Interactive Computing Systems*, 187-196, July 2009. {CAN-ACT}

[30] **H. Dehmeshki**, W. Stuerzlinger, GPSel: A Gestural Perceptual-based Path Selection Technique, *Smart Graphics*, 243-252, May 2009. {Transducis}

[31] **R. Teather**, **A. Pavlovych**, W. Stuerzlinger, S. MacKenzie, Effects of tracking technology, latency, and spatial jitter on object movement, *IEEE Symp. 3D User Interfaces*, 43-50, Mar. 2009. {D}

[32] **H. Dehmeshki**, W. Stuerzlinger, Intelligent Mouse-based Object Group Selection, *Smart Graphics*, 33-44, Aug. 2008. {Transducis, 7}

[33] **R. Kerr**, W. Stuerzlinger, Context-Sensitive Cut, Copy and Paste, *Conference on Computer Science and Software Engineering*, 159-166, May 2008. {unfunded}

[34] **R. Teather**, W. Stuerzlinger, Assessing the Effects of Orientation and Device on (Constrained) 3D Movement Techniques, *IEEE Symposium on 3D User Interfaces*, 43-50, March 2008. {D}

[35] **R. Teather**, W. Stuerzlinger, Guidelines for 3D Object Positioning Techniques, *Futureplay*, 61-68, Nov 2007. {D}

[36] **A. Das**, W. Stuerzlinger, A Cognitive Simulation Model for Novice Text Entry on Cell Phone Keypads, *European Conference on Cognitive Ergonomics*, 141-147, Aug 2007. {D, York}

[37] **O. Tumanov**, R. Allison, W. Stuerzlinger, Variability-Aware Latency Amelioration in Distributed Environments, *IEEE VR*, 123-130, Mar 2007. {R. Allison}

[38] W. Stuerzlinger, O. Chapuis, **D. Phillips**, N. Roussel, User Interface Façades: Towards Fully Adaptable User Interfaces, *ACM UIST*, 309-318, October 2006. {France, D}

I have published 56 more refereed publications.

II.3. Other Evidence of Impact and Contributions

Limited License, Professional Engineers of Ontario, Feb 2010.

- Awards, Fellowships, Honours

Recognition of Service Award, ACM SIG Governing Board, 2012.
Honorable Mention award, IEEE 3D UI Contest 2012. Together with Jia Wang and 6 others.
Certificate of Appreciation (for outstanding leadership), IEEE TVCG, Mar. 2008 and Mar. 2009.
"Special Recognition" award, by ACM CHI 2005 paper chairs.
Erwin Schrödinger Fellowship, Austrian Science Foundation, US$ 29,200, 1997-1998.
Best paper "Günther Enderle" award at Eurographics '96, together with G. Schaufler, Aug. 1996.

- Membership on Boards, Committees and Reviewing

Member of Board of Directors, GRAND NCE, 2010-present.
Member of IEEE 3DUI Steering Committee 2006-present.
Member of editorial board, Journal of Graphics Tools, AK Peters, 2001-present.
Member of editorial board, Journal of WCSG, 2001-2005.
Program chair: ACM Symp. Spatial User Interaction 2013, ACM Symp. Virtual Reality Systems and Technology 2012, IEEE Symp. on 3D User Interfaces 2006-2008, Graphics Interface 2002, Eurographics Virtual Environments 2002.
Membership on more than 50 international programme committees.

- Patents

W. Stuerzlinger, Collaborative Pointing Devices, US patent 7,193,608, 2007, CA patent CA 2429880.
L. Whitehead, G. Ward, W. Stuerzlinger, H. Seetzen, High dynamic range display devices, US patents US6891672 and 12 more, China patent ZL02805551.9, Hong Kong patent HK1069212.
15 more patents are currently filed. Nine more "Records of Invention" filed with York Research.

- Prestigious Invited Lectures in last 6 years

Is 'Iron Man 2' Right? Re-Investigating 3D User Interfaces, **Keynote** at MHCI 2013, **Keynote** at i-Society 2013, **Keynote** at Touch Gesture Motion 2013, as part of Displayweek 2013.
Is 'Iron Man 2' Right? Re-Investigating 3D User Interfaces, Univ. of Aalborg, Denmark, May 2012, Univ. of Würzburg, Germany, Univ. of Western Ontario, Canada, June 2012, McMaster University, Canada, April 2013, University of Toronto, Canada, June 2013.
Stereo vs. One-Eyed Cursors and Implications for Touch Interfaces, **Dagstuhl Seminar** "Touching the 3rd Dimension", Germany, April 2012.
Is 'Iron Man 2' Right? Re-Investigating 3D User Interfaces, Univ. of Aalborg, Denmark, May 2012, Univ. of Würzburg, Germany, Univ. of Western Ontario, June 2012, Univ. of Otago, Univ. of Auckland, New Zealand, Feb 2012, HITlabNZ, New Zealand, Dec. 2011, UBC, Simon Fraser Univ., Univ. of Manitoba, July 2011, Univ. of Waterloo, Oct 2011, **TEDx Talk, Toronto, Nov. 2010**.
Is 'Minority Report' Right? Reflections on 3D User Interfaces, **Royal Canadian Institute**, Feb. 2010.
Guidelines for Developing 3D User Interfaces, Univ. Stuttgart, Germany, June 2009.
3D User Interfaces: Design, Implementation, Usability, with 4 others, Course at ACM CHI 2009.
3D Interaction for Desktops and Games, **Invited talk** at ACM Futureplay 2008, Toronto, Nov. 2008.
Next Generation 3D Manipulation Techniques, **Dagstuhl Seminar** "Virtual Realities", June 2008.
Next Generation 3D Interface Techniques, Presentation at Panel "3D User Interfaces: Present and Future", IEEE 3DUI Symposium, March 2008.

- Industry Involvement

In 1982, I co-founded RZL Computer Software GesmbH, a tax accountant software company in Austria. Since 1989, this company has been continuously market leader in Austria. Now I am consulting for it.

In the past I participated in Brightside Technologies (now sold to Dolby Technologies).
Currently I am a member of the Advisory Board for bookfly.ca and co-founder of another start-up.

II.5 Contributions to the Training of HQP in last 6 years

I am currently supervising 1 postdoc, 2 MSc, 2 PhD students. In the past 6 years, I directly supervised and graduated in total 10 Master's, 5 PhD students and 2 postdocs. Many of my graduate students were supported through prestigious external scholarships, such as NSERC PGS and OGS. I involved more than 45 undergraduates, partially in groups, in my work in small-scale research projects (only partially listed in Form 100 due to space constraints). These are typically capstone projects in the last year of their studies or NSERC USRA's. Such projects often motivate good undergrads to go further into research and graduate school. All of my graduate students and a few undergraduates co-authored papers with me. Some of this work appeared in high impact venues such as ACM CHI, UIST, and IEEE VR. I have graduated most of my recent PhD students within reasonable time frames. This is not directly evident from the HQP table in Form 100. Our graduate program requires students to do either industrial internships or teaching practicums. Internships are very valuable for skill development and often take place at IBM and similar companies. Yet, several of my students were granted longer leaves by the Faculty of Graduate Studies at York, due to compassionate causes, for parental leaves, or for internships extending beyond a single term. Subtracting these leaves shows that more than 80% of my PhD students graduated or are likely to graduate within 5 years. Before 2006, I supervised 70 undergraduate and 25 graduate students.

I supervise on average more than 10 graduate and undergraduate HQP per term. I teach and mentor these students not only on the necessary technical and analytical skills, presentation, writing, team participation and leadership, but also discuss the realities of industry and academia. Especially for senior PhD students, I also advise my HQP on university life, the dissemination of results, teaching, resume and grant writing, as well as mentoring. For feedback and networking, students are encouraged to demonstrate to visitors. I involve my students in academic and industrial collaborations and research meetings, e.g., within the GRAND NCE, NSERC CREATE CAN-ACT, and CIV-DDD projects. Moreover, I tailor my advice to each student's interest, to ensure they receive the best training possible, and to inspire them to reach their full potential. Based on my industrial experience, my mentoring includes discussions on intellectual property, market trends, business, and management.

Beyond my own efforts, the rich graduate environment at York provides additional stimuli. I am part of the Interactive Systems Research Lab at York, jointly run by three professors in Human-Computer Interaction and there is an active culture of collaboration. Moreover, I am part of the Centre of Vision Research (CVR), a world leader in human perception and action research. Based on strengths in the CVR and in my Department, York has particular strengths in 3D related research. Local events, such as the talk series in my Department and the CVR, expose students to other research areas and methodologies. I strongly encourage students to regularly attend such talks whenever possible. All this prepares my students very well for their careers and the job market.

Based on my training, some of the best undergrad and graduate students have continued in my group or went to other supervisors at York or other universities. Several are now postdocs or senior research associates, e.g., at UoT, and one has taken up a faculty position at TU Darmstadt. The remainder went to industry, where some have (co-)founded successful companies. Others occupy a wide range of positions, including a CTO of Balanced Worlds, several CEOs, a COO, and other leading positions, such as VP software at Fox-Tek, user interface design leads at Autodesk and CIBC, and software leads at ETM and BMD. Most of my students are employed directly after or even before graduation, the rest almost exclusively within 3 months, which documents the demand for my graduates.

For more information please refer to: http://www.cse.yorku.ca/~wolfgang

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SEND ONE ORIGINAL ONLY DO NOT PHOTOCOPY

APPENDIX A
Personal Data
(Form 100)

Complete this appendix (i) if you are an applicant or co-applicant applying for the first time; (ii) if you need to update information submitted with a previous application; or (iii) if you do not hold an appointment at a Canadian postsecondary institution. For updates, include only the revised information in addition to the date, your name and your PIN.

This information will be used by NSERC primarily to contact applicants and award holders. It may also be used to identify prospective reviewers and committee members, and to generate statistics. It will not be seen or used in the adjudication process.

Date: 2013/06/14

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Stuerzlinger	Wolfgang	W	**Valid** 220351

Position and complete mailing address if your primary place of employment is not a Canadian postsecondary institution or if your current mailing address is temporary

4700 Keele Street, LAS/CSEB 1003

Toronto ON M3J1P3
CANADA

If address is temporary, indicate:

Starting date

Leaving date

Telephone number	Facsimile number	E-mail address
(416) 7362100 33947	(416) 7365872	wolfgang@cse.yorku.ca

Telephone number (alternate)

Give an alternate telephone number only if you can be reached at that number during business hours.

Gender (completion optional) ☐ Male ☐ Female

LANGUAGE CAPABILITY

English	Read	X	Write	X	Speak	X
French	Read	☐	Write	☐	Speak	☐

I wish to receive my correspondence: in English X in French ☐

AREA(S) OF EXPERTISE

Provide a maximum of 10 key words that describe your area(s) of expertise. Use commas to separate them. If you have expertise with particular instruments and techniques, specify which one(s).

Human-Computer Interaction, Interactive Graphical Systems, User Interfaces for Virtual Environments, Virtual Reality Systems, Single/Shared Display Groupware, Display Technologies, Reconstruction/Scanning of 3D Models, Parallel Rendering, Real-Time Rendering, Distributed Systems

Research subject code(s)

Primary: 2716

Secondary: 2700

Appendix D (Form 100)
Consent to Provide Limited Personal Information About Highly Qualified Personnel (HQP) to NSERC

NSERC applicants are required to describe their contributions to the training or supervision of highly qualified personnel (HQP) by providing certain details about the individuals they have trained or supervised during the six years prior to their current application. HQP information must be entered on the Personal Data Form (Form 100). This information includes the trainee's name, type of HQP training (e.g., undergraduate, master's, technical etc.) and status (completed, in-progress, incomplete), years supervised or co-supervised, title of the project or thesis, and the individual's present position.

Based on the federal *Privacy Act* rules governing the collection of personal information, applicants are asked to obtain consent from the individuals they have supervised before providing personal data about them to NSERC. In seeking this consent, the NSERC applicant must inform these individuals what data will be supplied, and assure them that it will only be used by NSERC for the purpose of assessing the applicant's contribution to HQP training. To reduce seeking consent for multiple applications, applicants will only need to seek consent one time for a six-year period. If the trainee provides consent by e-mail, the response must include confirmation that they have read and agree to the text of the consent form.

When consent cannot be obtained, applicants are asked to not provide names, or other combinations of data, that would identify those supervised. However, they may still provide the type of HQP training and status, years supervised or co-supervised, a general description of the project or thesis, and a general indication of the individual's present position if known.

An example of entering HQP information on Form 100 (with and without consent):

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Consent Received from Marie Roy				
Roy, Marie	Undergraduate (Completed)	Supervised 1994 - 1997	Isotope geochemistry in petroleum engineering	V-P (Research), Earth Analytics Inc., Calgary, Alberta
Consent Not Obtained from Marie Roy				
(name withheld)	Undergraduate (Completed)	Supervised 1994 - 1997	Isotope geochemistry	research executive in petroleum industry - western Canada

Consent Form

Name of Trainee	
Applicant Information	
Name Stuerzlinger, Wolfgang W	
Department Computer Science and Engineering	Postsecondary Institution York

I hereby allow the above-named applicant to include limited personal data about me in grant applications submitted for consideration to NSERC for the next six years. This limited data will only include my name, type of HQP training and status, years supervised or co-supervised, title of the project or thesis and, to the best of the applicant's knowledge, my position title and company or organization at the time the application is submitted. I understand that NSERC will protect this data in accordance with the *Privacy Act*, and that it will only be used in processes that assess the applicant's contributions to the training of highly qualified personnel (HQP), including confidential peer review.

Trainee's signature _____ Date _____

Note: This form must be retained by the applicant and made available to NSERC upon request.