Daniel Vogel, Curriculum Vitae

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Associate Professor, University of Waterloo
> Human-Computer Interaction Lab
> Cheriton School of Computer Science

Overview

My research area is Human Computer Interaction, focusing on fundamental characteristics of human input and novel forms of interaction for current and future computing form factors like touch, tangibles, mid-air gestures, and whole-body input, for everything from on-body wearable devices and mobile phones, to large displays and virtual reality. My unique background has enabled me to leverage a combined art and science approach to research, for example I was awarded a major grant to build a $1.8 million lab to explore the intersection of HCI and Fine Art in spatial augmented reality. I have more than 100 papers published or forthcoming (several with awards and high citations), my artwork has been featured in solo and group exhibitions, and I've received multiple research excellence awards at the university and national levels.

Degrees

PhD Computer Science, University of Toronto, *2005 - 2010*
> Human Computer Interaction, "Direct Pen Input and Hand Occlusion"
>
> ✱ BILL BUXTON DISSERTATION AWARD

MSc Computer Science, University of Toronto, *2003 - 2005*
> Human Computer Interaction, "Interactive Public Ambient Displays"

BFA Intermedia, Emily Carr University of Art and Design, *1993 - 1996*
> specializing in 3D computer animation, interactive media, installation art, and printmaking

BA Computer Science and Visual Arts, Western University, *1989 - 1993*
> ✱ DEAN'S HONOUR LIST

Professional Experience

Associate Professor, University of Waterloo, *2017 -*
> Human-Computer Interaction Lab
> Cheriton School of Computer Science

past

Assistant Professor, University of Waterloo, *2013 - 2017*
> Human-Computer Interaction Lab
> Cheriton School of Computer Science

Banting Postdoctoral Fellow, University of Waterloo, *2011 – 2013*
> Computer Graphics Lab and Human-Computer Interaction Lab
> Cheriton School of Computer Science

Visiting Researcher, Inria Lille, France, *2010*
> Mint Research Team

Adjunct Professor, Mount Allison University, *2008, 2009, 2010 - 2012*
Department of Mathematics and Computer Science

Freelance Consultant, *2002 – 2013*
Information Architecture, Graphic Design, Usability Recommendations
clients include Sapient, The Royal Bank Financial Group, Bell Media

Organic, Toronto, *May – Oct 2002*
Senior Information Architect (contract)

Cyberplex, Toronto, *Sep 1999 – May 2002*
Department Manager and Senior Information Architect

Bratch Innovation, Toronto, *Jan 1999 – Aug 1999*
Creative Director

Research Funding

Awarded more than $900K since 2017, more than $2.4 million over career since 2013

Meta Research Labs, *Jan 2022*
$30,000, "Gift for Metaverse Research"
(principal investigator)

Waterloo-Huawei Joint Innovation Lab Grant, *Oct 2020 – Apr 2022*
$103,550, "Interaction for a Next Generation Computer"
(principal investigator)

NRC-Waterloo Collaboration, *Jan 2019 – Dec 2021*
$90,000, "Battery Free Touch Sensors for Internet of things (IoT)"
(co-investigator with Omid Abari)

DND/NSERC Discovery Grant Supplement, *Jan 2019 – Jan 2022*
$120,000 over 3 years, "Human-Computer Interaction for Spatial Augmented Reality"
(principal investigator)

NSERC Discovery Accelerator Supplement, *May 2018 – May 2021*
$120,000 over 3 years, "Human-Computer Interaction for Spatial Augmented Reality"
(principal investigator)

NSERC Discovery Grant, *May 2018 – May 2023*
$240,000 over 5 years, "Human-Computer Interaction for Spatial Augmented Reality"
(principal investigator)

Google Faculty Research Award, *Mar 2018*
$52,800, "Android Everywhere: HCI for a Smartphone Controlled Spatial Augmented Reality"
(principal investigator)

Huawei Sponsored Research Project, *Mar 2018 – Mar 2019*
$125,515, "Intention-based User Interface Interaction Techniques"
(principal investigator)

Ontario Early Researcher Award, *May 2017 – Apr 2022*
$150,000, "Human-Computer Interaction for Fully Interactive Physio-digital Spaces"
(principal investigator)

Canada Foundation for Innovation (CFI) Innovation Fund, *2015*
$616,306, part of $1.9 million "Facility for Fully Interactive Physio-digital Spaces"
(principal investigator, with 4 co-investigators)

Ontario Research Fund (ORF) – Large Infrastructure Fund, *2015*
$616,306, part of $1.9 million "Facility for Fully Interactive Physio-digital Spaces"
(principal investigator, with 4 co-investigators)

NSERC Engage Grant, *Jan – Aug 2015*

$25,000, Tactual Labs, "Touch Dragging Latency Compensation with High Frequency Input"
(principal investigator)

MITACS Globallink Research Award – Inria, *Jun – Sep 2015*

$4,629 for Alix Goguey's 4 month Phd internship at University of Waterloo for research on "Human Performance of Finger Identification for Multitouch Input"
(principal investigator with Géry Casiez)

Chronic Disease Prevention Initiative (CDPI) Seed Funding, *2015*

$10,000, "COMPuterized Sideline Screening (COMPaSS) of neuromotor performance to prevent Chronic Effects of Traumatic Brain Injury (TBI)"
(co-investigator with 7 others from Engineering and Kinesiology)

NSERC Engage Grant, *Oct 2013 – Mar 2014*

$24,544, Thalmic Labs, "Gestural Two-Dimensional Pointing and Target Selection using Inertial Arm Motion and Muscle Activity"
(principal investigator)

NSERC Discovery Grant, *May 2013 – May 2018*

$100,000 over 5 years, "Subtle Whole-body Interaction"
(principal investigator)

Banting Postdoctoral Fellowship, *Jul 2011 – May 2013*

$140,000 salary and $50,000 start-up funds over 24 months for "The Design and Evaluation of an Interactive Public Ambient Display in an Art Gallery Context: Understanding Aesthetic Interaction Experiences"

Awards and Honours

Best Paper Honourable Mention (top 5%), ACM ISS, *2021*

for C80 Typealike (with Nalin Chhibber, Hemant Bhaskar Surale, and Fabrice Matulic)

Best Paper Honourable Mention (top 5%), ACM CHI, *2021*

for C76 Typing Efficiency and Suggestion Accuracy (with Quentin Roy, Sébastien Berlioux, and Géry Casiez)

Best Paper Award (top 1%), ACM CHI, *2020*

for C63 PenSight (with Fabrice Matulic, Riku Arakawa, Brian K. Vogel)

Best Paper Honourable Mention (top 5%), ACM CHI, *2020*

for C62 Improving VR Ergonomics (with Johann Wentzel and Greg d'Eon)

Best System Demo Award, ACM SIGMOD, *2020*

for O9 Sentinel: Understanding Data Systems (with Brad Glasbergen, Michael Abebe, Khuzaima Daudjee, and Jian Zhao)

Cheriton Faculty Fellow, University of Waterloo, School of Computer Science, *2019 - 2022*

for leading faculty in computer science with an emphasis on supporting research that addresses problems associated with designing and implementing efficient and reliable computing systems

Outstanding Young Computer Science Researcher Prize, CS-Can/Info-Can, *2019*

for faculty members in Canadian computer science departments who are within the first ten years of their career and have demonstrated excellence in research

Best Paper Honourable Mention (top 5%), ACM CHI, *2019*

for C54 VR Mode Switching (with Hemant Surale and Fabrice Matulic)

Best Paper Honourable Mention (top 5%), ACM CHI, *2019*

for C50 Automation Accuracy Is Good … (with Quentin Roy and Futian Zhang)

Golden Jubilee Research Excellence Award, University of Waterloo Faculty of Math, *2018*

for early or mid-career faculty members who have made outstanding research contributions

Best Paper Honourable Mention (top 5%), ACM CHI, *2018*
> for C44 Multiray (with Fabrice Matulic)

Best Paper Honourable Mention (top 5%), ACM DIS, *2017*
> for C39 Guided Selfies using Models of Portrait Aesthetics (with Qifan Li)

Best Paper Award, ACM IHM, *2014*
> for C21 Adoiraccourcix (with 4 other authors)

Best Paper Honourable Mention (top 5%), ACM CHI, *2014*
> for C18 Crossing-Based Selection with Direct Touch Input (with Yuexing Luo)

GRAND Young Network Investigator Award, *2013*
> $5,000

Bill Buxton Dissertation Award, Cdn Human Computer Communications Society, *2011*
> best Canadian doctoral dissertation in Human-Computer Interaction (co-recipient)

Best Paper Award (top 1%), ACM CHI, *2010*
> for C9 Occlusion-Aware Interfaces (with Ravin Balakrishnan)

Best Paper Honourable Mention (top 5%), ACM CHI, *2008*
> for C7 The Effect of Spring Stiffness (with Géry Casiez)

Best Paper Award (top 1%), ACM CHI, *2007*
> for C4 Shift (with Patrick Baudisch)

Publications

85 conference proceedings, 9 journal articles

5100+ citations, h-index 30 (Google Scholar)

2200+ citations (ACM Digital Library)

Peer-reviewed Conference Proceedings

Note about conference papers: in Human-Computer Interaction, like many fields of experimental Computer Science, conference proceedings are the preferred publication venue since they are timelier and typically have greatest impact. Top tier conferences are very selective with rigorous multi-stage review of full manuscripts creating high quality fully archival proceedings. See Meyer et al. (2009) for more background regarding conference proceedings in experimental Computer Science.

Note about paper length: all conference proceeding papers are reviewed using the same process and criteria, regardless of page length. All papers in this section are considered full publications, not semi-archival papers associated with workshops, posters, demos, etc.

Note about venues: CHI (the ACM Conference on Human Factors in Computing Systems) and UIST (the ACM symposium on User Interface Software and Technology) are both recognized as very top tier HCI conferences (Google Scholar and Microsoft Academic both rank them as #1 and #3). The average acceptance rate for CHI is 23% and UIST 21%.

2022

C85 **Matthew Lakier**, Daniel Vogel. More than just Software Surprises: Purposes, Processes, and Directions for Software Application Easter Eggs. *CSCW 2022*. 18 p.

C84 **Jeremy Hartmann**, Daniel Vogel. Enhanced Videogame Livestreaming by Reconstructing an Interactive 3D Game View for Spectators. *CHI 2022*. 10 p.

C83 **Graeme Zinck**, Daniel Vogel. Evaluating Singing for Computer Input Using Pitch, Interval, and Melody. *CHI 2022*. 10 p.

C82 **Margaret Jean Foley**, Quentin Roy, Da-Yuan Huang, Wie Li, Daniel Vogel. Switching Between Standard Pointing Methods with Current and Emerging Computer Form Factors. *CHI 2022*. 10 p.

C81 **Nikhita Joshi, Matthew Lakier**, Daniel Vogel, Jian Zhao. A Design Framework for Contextual and Embedded Information Visualizations in Spatial Augmented Reality. *GI 2022*. 10p.

2021

C80 **Nalin Chhibber**, Hemant Bhaskar Surale, Fabrice Matulic, Daniel Vogel.Typealike: Near-Keyboard Hand Postures for Expanded Laptop Interaction. *ISS 2021.* 16 p.
✷ BEST PAPER HONOURABLE MENTION

C79 **Terence Dickson**, Rina R. Wehbe, Fabrice Matulic, Daniel Vogel. HybridPointing for Touch: Switching Between Absolute and Relative Pointing on Large Touch Screens. *ISS 2021.* 16 p.

C78 **Antony Albert Raj Irudayaraj**, Rishav Agarwal, **Nikhita Joshi**, Aakar Gupta, Omid Abari, Daniel Vogel. PocketView: Through-Fabric Information Displays. *UIST 2021.* 16 p.

C77 Jason Ceci, Hassan Khan, Urs Hengartner, Daniel Vogel. Concerned but Ineffective: User Perceptions, Methods, and Challenges when Sanitizing Old Devices for Disposal. *SOUPS 2021.* 19 p.

C76 **Quentin Roy,** Sébastien Berlioux, Géry Casiez, Daniel Vogel. Typing Efficiency and Suggestion Accuracy Influence the Benefits and Adoption of Word Suggestions. *CHI 2021.* 10 p.
✷ BEST PAPER HONOURABLE MENTION

C75 **Ludwig Wilhelm Wall,** Alec Jacobson, Daniel Vogel, Oliver Schneider. Scrappy: Using Scrap Material as Infill to Make Fabrication More Sustainable. *CHI 2021.* 10 p.

C74 Fabrice Matulic, Aditya Ganeshan, Hiroshi Fujiwara, Daniel Vogel. Phonetroller: Visual Representations of Fingers for Precise Touch Input when using a Phone in VR. *CHI 2021.* 10 p.

C73 Julie Funk, **Matthew Lakier,** Marcel O'Gorman, Daniel Vogel. Exploring Smartphone Relationships through Roland Barthes using an Instrumented Pillow Technology Probe. *CHI 2021.* 10 p.

2020

C72 Ju Wang, Jianyan Li, Mohammad Hossein Mazaheri, Keiko Katsuragawa, Daniel Vogel, Omid Abari, Sensing Finger Input Using an RFID Transmission Line. *SenSys 2020*. 10 p.

C71 **Yen-Ting Yeh**, **Quentin Roy**, **Antony Albert Raj Irudayaraj**, Daniel Vogel. Expanding Side Touch Input on Mobile Phones: Finger Reachability and Two-Dimensional Taps and Flicks using the Index and Thumb. *ISS 2020*. 10 p.

C70 **Jeremy Hartmann**, Aakar Gupta, Daniel Vogel. Extend, Push, Pull: Smartphone Mediated Interaction in Spatial Augmented Reality. *SUI 2020*. 10 p.

C69 **Jeremy Hartmann**, **Yen-Ting Yeh**, Daniel Vogel. AAR: Augmenting a Wearable Augmented Reality Display with an Actuated Head-Mounted Projector. *UIST 2020*. 10 p.

C68 **Jeremy Hartmann**, Stephen DiVerdi, Cuong Nguyen, Daniel Vogel. View-Dependent Effects for 360° Virtual Reality Video. *UIST 2020*. 10 p.

C67 **Lisa A. Elkin**, **Jean-Baptiste Beau**, Géry Casiez, Daniel Vogel. Manipulation, Learning, and Recall with Tangible Pen-Like Input. *CHI 2020*. 10 p.

C66 **Margaret Foley**, Géry Casiez, Daniel Vogel. Comparing Smartphone Speech Recognition and Touchscreen Typing for Composition and Transcription. *CHI 2020.*10 p.

C65 **Aakar Gupta**, **Bo Rui Lin**, **Siyi Ji**, **Arjav Patel**, Daniel Vogel. Replicate and Reuse: Tangible Interaction Design for Digitally-Augmented Physical Media Objects. *CHI 2020*. 10 p.

C64 **Blaine Lewis**, **Greg d'Eon**, Andy Cockburn, Daniel Vogel. KeyMap: Improving Keyboard Shortcut Vocabulary Using Norman's Mapping. *CHI 2020*. 10 p.

C63 Fabrice Matulic, Riku Arakawa, Brian K. Vogel, Daniel Vogel. PenSight: Enhanced Interaction with a Pen-Top Camera. *CHI 2020*. 10 p.
✷ BEST PAPER AWARD

C62 **Johann Wentzel**, **Greg d'Eon**, Daniel Vogel. Improving Virtual Reality Ergonomics Through Reach-Bounded Non-Linear Input Amplification. *CHI 2020*. 10 p.
✱ BEST PAPER HONOURABLE MENTION

2019

C61 Jeff Avery, Daniel Vogel, Edward Lank, Damien Masson, Hanae Rateau. Holding Patterns: Detecting Handedness with a Moving Smartphone at Pickup. *IHM 2019*. 7 p.

C60 Fabrice Matulic, Brian Vogel, Naoki Kimura, Daniel Vogel. Eliciting Pen-Holding Postures for General Input with Suitability for EMG Armband Detection. *ISS 2019*. 9 p.

C59 Keiko Katsuragawa, Ju Wang, **Ziyang Shan**, **Ningshan Ouyang**, Omid Abari, Daniel Vogel. Tip-Tap: Battery-free Discrete 2D Fingertip Input. *UIST 2019*. 10 p.

C58 **Matthew Lakier**, Lennart E. Nacke, Takeo Igarashi, Daniel Vogel. Cross-Car, Multiplayer Games for Semi-Autonomous Driving. *CHI PLAY 2019*. 10 p.

C57 Hui-Shyong Yeo, Juyoung Lee, Hyung-il Kim, **Aakar Gupta**, Andrea Bianchi, Daniel Vogel, Hideki Koike, Woontack Woo, Aaron J Quigley. WRIST: Watch-Ring Interaction and Sensing Technique for Wrist Gestures and Macro-Micro Pointing. *MobileHCI 2019*. 12 p.

C56 **Nikhita Joshi**, Daniel Vogel (2019). An Evaluation of Touch Input at the Edge of a Table. *CHI 2019*. 10 p.

C55 **Hemant Surale**, **Aakar Gupta**, Mark Hancock, Daniel Vogel (2019). TabletInVR: Exploring the Design Space for Using a Multi-Touch Tablet in Virtual Reality. *CHI 2019*. 10 p.

C54 **Hemant Surale**, **Fabrice Matulic**, Daniel Vogel (2019). Experimental Analysis of Barehand Mid-air Mode-Switching Techniques in Virtual Reality. *CHI 2019*. 10 p.
✱ BEST PAPER HONOURABLE MENTION

C53 **Joshua Jung, Rahul Iyer**, Daniel Vogel (2019). Automating the Intentional Encoding of Human-Designable Markers. *CHI 2019*. 10 p.

C52 **Aakar Gupta**. Cheng Ji. Hui-Shyong Yeo. Aaron J Quigley, Daniel Vogel (2019). RotoSwype: Word-gesture Typing using a Ring. *CHI 2019*. 10 p.

C51 Wenzhe Cui, **Jingjie Zheng, Blaine Lewis**, Daniel Vogel, Xiaojun Bi (2019). HotStrokes: Word-Gesture Shortcuts on a Trackpad. *CHI 2019*. 10 p.

C50 **Quentin Roy**, **Futian Zhang**, Daniel Vogel (2019). Automation Accuracy Is Good, but High Controllability May Be Better. *CHI 2019*. 7 p.
✱ BEST PAPER HONOURABLE MENTION

2018

C49 **Drini Cami**, **Fabrice Matulic**, Richard G. Calland, Brian Vogel, Daniel Vogel (2018). Unimanual Pen+Touch Input Using Variations of Precision Grip Postures. *UIST 2018*. 10 p.

C48 **Jingjie Zheng**, **Blaine Lewis**, **Jeff Avery**, Daniel Vogel (2018). FingerArc and FingerChord: Supporting Novice to Expert Transitions with Guided Finger-Aware Shortcuts. *UIST 2018*. 10 p.

C47 **Hassan Khan**, Urs Hengartner, Daniel Vogel (2018). Augmented Reality-based Mimicry Attacks on Behaviour-Based Smartphone Authentication. *MobiSys 2018*. 12 p.

C46 **Zhe Liu**, Daniel Vogel, James R. Wallace (2018). Applying the Cumulative Fatigue Model to Interaction on Large, Multi-Touch Displays. *PerDis 2018,* 9 p.

C45 **Hassan Khan**, Urs Hengartner, Daniel Vogel (2018). Evaluating Attack and Defense Strategies for Smartphone PIN Shoulder Surfing. *CHI 2018*. 9 p.

C44 **Fabrice Matulic**, Daniel Vogel (2018). Multiray: Multi-Finger Raycasting for Large Displays. *CHI 2018*. 9 p.
✱ BEST PAPER HONOURABLE MENTION

C43 **Alix Goguey**, Géry Casiez, Daniel Vogel, Carl Gutwin (2018). Characterizing Finger Pitch and Roll Orientation During Atomic Touch Actions. *CHI 2018*. 10 p.

C42 **Joshua Jung**, Daniel Vogel (2018). Methods for Intentional Encoding of High Capacity Human-Designable Visual Markers. *CHI 2018*. 9 p.

2017

C41 **Teddy Seyed**, Xing-Dong Yang, Daniel Vogel (2017). A Modular Smartphone for Lending. *UIST 2017*. p. 205-215.

C40 **Fabrice Matulic**, Daniel Vogel, Raimund Dachselt (2017). Hand Contact Shape Recognition for Posture-Based Tabletop Widgets and Interaction. *ISS 2017*. p. 3-11.

C39 **Qifan Li,** Daniel Vogel (2017). Guided Selfies using Models of Portrait Aesthetics. *Proc. of DIS'17, the ACM SIGCHI Conference on Designing Interactive Systems*. p. 179-190.
     ✱ BEST PAPER HONOURABLE MENTION

C38 **Hemant Surale**, **Fabrice Matulic**, Daniel Vogel (2017). Experimental Analysis of Mode Switching Techniques in Touch-based User Interfaces. *Proc. of CHI'17, the 35th Conference on Human Factors in Computing Systems*. p. 3267-3280.

C37 Jun Gong, Lang Li, Daniel Vogel, Xing-Dong Yang (2017). Cito: An Actuated Smartwatch for Extended Interactions. *Proc. of CHI'17, the 35th Conference on Human Factors in Computing Systems*. p. 5331-5345.

2016

C36 Pei-Yu Chi, Mira Dontcheva, Wilmot Li, Daniel Vogel, Björn Hartmann (2016). Authoring Illustrations of Human Movements by Iterative Physical Demonstration. *Proc. of UIST'16, the 29th ACM Symposium on User Interface Software and Technology.* p. 809-820.

C35 **Mathieu Nancel**, Daniel Vogel, Bruno De Araujo, Ricardo Jota, Géry Casiez (2016). Next-Point Prediction Metrics for Perceived Spatial Errors. *Proc. of UIST'16, the 29th ACM Symposium on User Interface Software and Technology.* p. 271-285.

C34 Hassan Khan, Urs Hengartner, Daniel Vogel (2016). Targeted Mimicry Attacks on Touch Input Based Implicit Authentication Schemes. *Proc. of MobiSys'16, the 14th ACM International Conference on Mobile Systems, Applications, and Services.* p. 387-398.

C33 **William Saunders,** Daniel Vogel (2016). Tap-Kick-Click: Foot Interaction for a Standing Desk. *Proc. of DIS'16, the ACM SIGCHI Conference on Designing Interactive Systems*. p. 323-333.

C32 **Jingjie Zheng,** Daniel Vogel (2016). Finger-Aware Shortcuts. *Proc. of CHI'16, the 34th Conference on Human Factors in Computing Systems*. p. 4274-4285.

C31 **Teddy Seyed,** Xing-Dong Yang, Daniel Vogel (2016). Doppio: A Reconfigurable Dual-Face Smartwatch for Tangible Interaction. *Proc. of CHI'16, the 34th Conference on Human Factors in Computing Systems*. p. 4675-4686.

C30 **Alix Goguey, Mathieu Nancel**, Géry Casiez, Daniel Vogel (2016). The Performance and Preference of Different Fingers and Chords for Pointing, Dragging, and Object Transformation. *Proc. of CHI'16, the 34th Conference on Human Factors in Computing Systems*. p. 4250-4261.

2015

C29 **Mingyu Liu**, **Mathieu Nancel**, Daniel Vogel (2015). Gunslinger: Subtle Arms-down Mid-air Interaction. *Proc. of UIST'15, the 28th ACM Symposium on User Interface Software and Technology*. p. 63-71.

C28 **Yuexing Luo**, Daniel Vogel (2015). Pin-and-Cross: A Unimanual Multitouch Technique Combining Static Touches with Crossing Selection. *Proc. of UIST'15, the 28th ACM Symposium on User Interface Software and Technology*. p. 323-324.

C27 Hassan Khan, Urs Hengartner, Daniel Vogel (2015). Usability and Security Perceptions of Implicit Authentication: Convenient, Secure, Sometimes Annoying. *Proc. of SOUPS'15, the 11th Symposium on Usable Privacy and Security*. p. 225-239.

C26 **William Saunders**, Daniel Vogel (2015). The Performance of Indirect Foot Pointing using Discrete Taps and Kicks While Standing. *Proc. of Graphics Interface 2015*. p. 265-272.

C25 **Faizan Haque, Mathieu Nancel**, Daniel Vogel (2015). Myopoint: Pointing and Clicking Using Forearm Mounted Electromyography and Inertial Motion Sensors. *Proc. of CHI'15, the 33rd Conference on Human Factors in Computing Systems*. p. 3653-3656.

C24 Jaime Ruiz, Daniel Vogel (2015). Soft-Constraints to Reduce Legacy and Performance Bias to Elicit Whole-body Gestures with Low Arm Fatigue. *Proc. of CHI'15, the 33rd Conference on Human Factors in Computing Systems*. p. 3347-3350.

C23 **Mathieu Nancel**, Daniel Vogel, Edward Lank (2015). Clutching Is Not (Necessarily) the Enemy. *Proc. of CHI'15, the 33rd Conference on Human Factors in Computing Systems*. p. 4199-4202.

2014

C22 **Jeff Avery, Mark Choi**, Daniel Vogel, Edward Lank (2014). Pinch-to-Zoom-Plus: An enhanced pinch-to-zoom that reduces clutching and panning. *Proc. of UIST'14, the 27th ACM Symposium on User Interface Software and Technology*. p. 595-604.

C21 **Alix Goguey**, Géry Casiez, Daniel Vogel, Thomas Pietrzak, Nicolas Roussel (2014). Adoiraccourcix: multi-touch command selection using finger identification. *Proc. of. IHM'14, 26e conférence francophone sur l'Interaction Homme-Machine.* (French Text) p 28-37.
★ BEST PAPER AWARD

C20 James Wallace, Daniel Vogel, Edward Lank (2014). Effect of Interior Bezel Width on Visual Search Performance. *Proc. of. the International Symposium on Pervasive Displays.* 6 p.

C19 James Wallace, Daniel Vogel, Edward Lank (2014). The Effect of Interior Bezel Presence and Width on Magnitude Judgement. *Proc. of Graphics Interface 2014*. p.175-182.

C18 **Yuexing Luo**, Daniel Vogel (2014). Crossing-Based Selection with Direct Touch Input. *Proc. of CHI'14, the 32nd Conference on Human Factors in Computing Systems*. p. 2627-2636.
★ BEST PAPER HONOURABLE MENTION

2004 to 2013

C17 **Tiffany Inglis**, Daniel Vogel, Craig Kaplan. (2013). Rasterizing and antialiasing line art in the pixel art style. *Proc. of NPAR'13, Symposium on Non-Photorealistic Animation and Rendering*, p. 25-32.

C16 Géry Casiez, Nicholas Roussel, Jonathan Aceituno, Daniel Vogel. (2012). Giving a Hand to the Eyes: Leveraging Input Accuracy for Subpixel Interaction. *Proc. of UIST'12, the 25th ACM Symposium on User Interface Software and Technology*. p. 351-358.

C15 **Shehroz Khan**, Daniel Vogel. (2012). Evaluating Visual Aesthetics in Photographic Portraiture. *Proc. of CAe '12, Symposium on Computational Aesthetics*. p. 55-62.

C14 **Alec Azad, Jaime Ruiz**, Daniel Vogel, Mark Hancock, Edward Lank. (2012). Territoriality and Behaviour On and Around Large Vertical Publicly-Shared Displays. *Proc. of DIS'12,* ACM conference on *Designing Interactive Systems*. p. 468-477.

C13 Daniel Vogel, Géry Casiez. (2012). Hand Occlusion on a Multi-Touch Tabletop. *Proc. of CHI'12, the 30th Conference on Human Factors in Computing Systems*. p. 2307-2316.

C12 Géry Casiez, Nicholas Roussel, Daniel Vogel. (2012). 1€ Filter: A Simple Speed-based Low-pass Filter for Noisy Input in Interactive Systems. *Proc. of CHI'12, the 30th Conference on Human Factors in Computing Systems*. p. 2527-2530.

C11 Daniel Vogel, Géry Casiez. (2011). Conté: Multimodal Input Inspired by an Artist's Crayon. *Proc. of UIST'11, the 24th ACM Symposium on User Interface Software and Technology*. p. 357-366.

C10 Radu-Daniel Vatavu, Daniel Vogel, Géry Casiez, Laurent Grisoni. (2011). Estimating the Perceived Difficulty of Pen Gestures. *Proc. of INTERACT'11, the 13th IFIP TCI3 Conference on Human-Computer Interaction*. Springer. p. 89-106.

C9 Daniel Vogel, Ravin Balakrishnan. (2010). Occlusion-Aware Interfaces. *Proc.of CHI'10, the 28th Conference on Human Factors in Computing Systems*. p. 263-272.
★ BEST PAPER AWARD

C8   Daniel Vogel, **Matthew Cudmore**, Géry Casiez, Ravin Balakrishnan, Liam Keliher. (2009). Hand Occlusion with Tablet-sized Direct Pen Input. *Proc. of CHI'09, the 27th Conference on Human Factors in Computing Systems.* p. 557-566.

C7   Géry Casiez, Daniel Vogel. (2008). The Effect of Spring Stiffness and Control Gain with an Elastic Rate Control Pointing Device. *Proc. of CHI'08, the 27th Conference on Human Factors in Computing Systems.* p. 1709-1718.
   ✱ BEST PAPER HONOURABLE MENTION

C6   Ian Vollick, Daniel Vogel, Maneesh Agrawala, Aaron Hertzmann. (2007). Specifying Label Layout Styles by Example. *Proc. of UIST'07, the 20th ACM Symposium on User Interface Software and Technology.* p. 221-230.

C5   Géry Casiez, Daniel Vogel, Qing Pan, Christophe Chaillou. (2007). RubberEdge: Reducing Clutching by Combining Position and Rate Control with Elastic Feedback. *Proc. of UIST'07, the 20th ACM Symposium on User Interface Software and Technology.* p. 129-138.

C4   Daniel Vogel, Patrick Baudisch. (2007). Shift: A Technique for Operating Pen-Based Interfaces Using Touch. *Proc. of CHI'07, the 26th Conference on Human Factors in Computing Systems.* p. 657-666.
   ✱ BEST PAPER AWARD

C3   Clifton Forlines, Daniel Vogel, Ravin Balakrishnan. (2006). HybridPointing: Fluid Switching Between Absolute and Relative Pointing with a Direct Input Device. *Proc. of UIST'06, the 19th ACM Symposium on User Interface Software and Technology.* p. 211-220.

C2   Daniel Vogel, Ravin Balakrishnan. (2005). Distant freehand pointing and clicking on very large high resolution displays. *Proc. of UIST'05, the 18th ACM Symposium on User Interface Software and Technology.* p. 33-42.

C1   Daniel Vogel, Ravin Balakrishnan. (2004). Interactive public ambient displays: transitioning from implicit to explicit, public to personal, interaction with multiple users. *Proc. of UIST'04, the 17th ACM Symposium on User Interface Software and Technology.* p. 137-146.
   ✱ TOP TEN MOST CITED ARTICLE ACROSS HISTORY OF UIST

Book Chapters

B1   Fabrice Matulic, Daniel Vogel. (2021) Deep Learning-Based Hand Posture Recognition for Pen Interaction Enhancement. *in Artificial Intelligence for Human Computer Interaction: A Modern Approach, edited by Yang Li and Otmar Hilliges.* 32 p.

Journal Articles

J9   **Katherine Fennedy**, **Jeremy Hartmann**, **Quentin Roy**, Simon T Perrault, Daniel Vogel. (2021) OctoPocus in VR: Using a Dynamic Guide for 3D Mid-Air Gestures in Virtual Reality. *IEEE Transactions on Visualization and Computer Graphics (TCVG)*, 14 p.

J8   **Jeremy Hartmann**, Daniel Vogel. (2021), An Examination of Mobile Phone Pointing in Surface Mapped Spatial Augmented Reality, *Intl. Journal of Human-Computer Studies (IJHCS)*, 30 p.

J7   **Blaine Lewis**, Daniel Vogel. (2020). Longer Delays in Rehearsal-based Interfaces Increase Expert Use. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 35 p.

J6   Hassan Khan, Urs Hengartner, Daniel Vogel. (2020). Mimicry Attacks on Smartphone Keystroke Authentication. *ACM Transactions on Privacy and Security (TOPS) 23 (1)*, 34 p.

J5   Kasper Hornbæk, Aske Mottelson, Jarrod Knibbe, Daniel Vogel. (2019). What Do We Mean by 'Interaction'?: An Analysis of 35 Years of CHI. *ACM Transactions on Computer-Human Interaction (TOCHI) 26 (4)*, 30 p.

J4   Grindrod, Kelly, **Hassan Khan**, Urs Hengartner, Stephanie Ong, Alexander G. Logan, Daniel Vogel, Robert Gebotys, Jilan Yang. Evaluating authentication options for mobile health applications in younger and older adults. *PloS one* 13, no. 1 (2018): e0189048.

J3   **Alix Goguey,** Daniel Vogel, Fanny Chevalier, Thomas Pietrzak, Nicolas Roussel, Géry Casiez (2017). Leveraging Finger Identification to Integrate Multi-touch Command Selection and Parameter Manipulation. *International Journal of Human-Computer Studies.* Elsevier, p. 21-36.

J2   Daniel Vogel, Ravin Balakrishnan. (2010). Direct Pen Interaction with a Conventional Graphical User Interface. *Human-Computer Interaction Journal*. Taylor & Francis, 25 (4), p. 324-388.

J1   Géry Casiez, Daniel Vogel, Ravin Balakrishnan, Andy Cockburn. (2008). The Impact of Control-Display Gain on User Performance in Pointing Tasks. *Human-Computer Interaction Journal*. Taylor & Francis. 23 (3), p. 215-250.
       ✱ TOP TEN CITED ARTICLE FOR HCIJ FROM 2007 - 2010

Patents

P5   Daniel Vogel, Keiko Katasuragawa, Omid Abari (Awarded July 26, 2022). Multi-positional switch using passive wireless tags and systems and methods for using a multi-positional switch that uses passive wireless tags. US Patent 11,397,864, filed Oct 5, 2021.

P4   Géry Casiez, Daniel Vogel. (Submitted 2011). Multitouch Human Interface System and Device for Graphical Input, and Method for Processing Image in Such a System. 1000126888, Oct 14, 2011.

P3   Patrick Baudisch, Ken Hinckley, Raman Sarin, Edward Cutrell, Andy Wilson, Daniel Vogel. (Awarded 2010). Operating touch screen interfaces. US 7692629 B2, Filed Dec 7, 2006.

P2   Géry Casiez, Daniel Vogel. (Awarded 2009). Isotonic / elastic touch-sensitive input device. WO Patent 2,009,043,591, Filed Oct 5, 2007.

P1   Maneesh Agrawala, Adam Eversole, Daniel Vogel, Charles Jacobs, David Salesin. (Awarded 2006). Techniques for generating the layout of visual content. US 2006/0200759 A1, Filed Mar 5, 2005.

Art Exhibitions

A17   Siftor and My Name is Owen (2013). Owens Art Gallery, Sackville, NB. (solo exhibition).
       ✱ EXHIBITION CATALOG WITH INVITED ESSAY BY SUSAN EDLESTEIN

A16   Mondo Media (2013). Struts Art Gallery, Sackville, NB. (group exhibition).

A15   Travelogue (1997). Artspeak Gallery, Vancouver. (group exhibition).

A14   Las Vegas (1997). Havana, Vancouver. (group exhibition).

A13   Suburbia (1997). The Helen Pitt Gallery, Vancouver. (group exhibition).

A12   3 Sections, 1 Body (1997). Community Arts Council of Vancouver. (group exhibition).

A11   Exact Change (1996). The Helen Pitt Gallery, Vancouver. (group exhibition).

A10   Anniversary of the Comic (1996). Wedgemount Gallery, Belgium. (juried group exhibition).

A9   Beyond Borders (1996). Viking Union, Bellingham, WA. (juried group exhibition).

A8   Straight White Male (1996). Emily Carr Institute, Vancouver. (group exhibition).

A7   Canadaustralia Exchange (1996). Sydney, Toronto; Vancouver. (juried group exhibition).

A6   Images and Objects (1995). Kamloops, British Columbia. (juried group exhibition).

A5   Blue Plate Special (1995). The Flat, Vancouver. (group exhibition).

A4   Hydromedia (1995). Flux Studios, Vancouver. (group exhibition).

A3   Speed Kills (1995). The Flat, Vancouver. (group exhibition).

A2   13th Annual Vancouver Exhibition (1995). Community Arts Council of Vancouver. (juried group exhibition).

A1   Toys 'R' Art (1994). The Flat, Vancouver. (group exhibition).

Reports, Demonstrations, Editorials, Other Adjunct Publications

O11 **Daekun Kim**, Daniel Vogel. (2022). Everywhere Cursor: Extending Desktop Mouse Interaction into Spatial Augmented Reality. *CHI 2022 Extended Abstracts (LBW)*, 6 p.

O10 Fabrice Matulic, Daniel Vogel. (2022). Terrain Modelling with a Pen & Touch Tablet and Mid-Air Gestures in Virtual Reality. *CHI 2022 Extended Abstracts (LBW)*, 6 p.

O9 Brad Glasbergen, Michael Abebe, Khuzaima Daudjee, Daniel Vogel, Jian Zhao. Sentinel: Understanding Data Systems. *Proc. of SIGMOD, the 2020 International Conference on Management of Data.* Demonstration. 4 p.

    ★ **BEST SYSTEM DEMO AWARD**

O8 **Lisa A. Elkin**, Jean-Baptiste Beau, Géry Casiez, Daniel Vogel. A 26-Contact Tangible Pen-Like Input Device for Capacitive Displays. CHI Extended Abstracts 2020. Demo. 4 p.

O7 Nafisa Anzum, Semih Salihoglu, Daniel Vogel. (2019) GraphWrangler: An Interactive Graph View on Relational Data. *Proc. of SIGMOD, the 2019 International Conference on Management of Data.* Demonstration, 4 p.

O6 **Jeremy Hartmann**, Daniel Vogel. (2018). An Evaluation of Mobile Phone Pointing in Spatial Augmented Reality. *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems (LBW)*, 6 p.

O6 **Jeremy Hartmann**, **Hemant Surale**, **Aakar Gupta**, Daniel Vogel. (2018). Using Conformity to Probe Interaction Challenges in XR Collaboration. CHI 2018 *Workshop on Novel Interaction Techniques for Collaboration in VR*. 4 p. CoRR abs/2004.05235

O5 Dustin Freeman, Ricardo Jota, Daniel Vogel, Daniel Wigdor, Ravin Balakrishnan. (2015). A Dataset of Naturally Occurring, Whole-Body Background Activity to Reduce Gesture Conflicts. *arXiv preprint arXiv:1509.06109.* Technical Report. 10 p.

O4 Alix Goguey, Géry Casiez, Daniel Vogel, Fanny Chevalier, Thomas Pietrzak, Nicolas Roussel. (2014). A three-step interaction pattern for improving discoverability in finger identification techniques. *Proc. of the adjunct publication of the 27th annual ACM symposium on User interface software and technology (UIST'14 Adjunct).* Demonstration. p. 33-34.

O3 Daniel Vogel. (2013). Introduction to Mondo Monde New Media Festival Catalogue. *Faucet Media Arts Centre.*

O2 Daniel Vogel. (2012). Book Review: Form+Code in Design, Art, and Architecture, by Casey Reas, Chandler McWilliams, and LUST. *Journal of Mathematics and the Arts* v6 i4, p. 221-223.

O1 Clifton Forlines, Daniel Vogel, Nicholas Kong, Ravin Balakrishnan. (2006). Absolute vs. relative direct pen input. *Mitsubishi Electric Research Labs, TR2006-066.* Technical Report. 10 p.

Symposia

Rank Prize Symposium, invited participant, Nov *2013, Grasmere, United Kingdom*
"Natural User Interfaces, Augmented Reality and Beyond: Challenges at the Intersection of HCI and Computer Vision",

Schloss Dagstuhl Seminar, invited participant, Nov *2013, St. Wendel, Germany*
"Proxemics in Human-Computer Interaction" (#13452)

Invited talks

Keynote

"Immersive Analytics" Workshop, ACM ISS, Niagara Falls*, Nov 6, 2016*

Atlantic Provinces Art Gallery Association, PEI, "Keynote: Beyond the Keyboard"*, May 2008*

Invited Speaker

Waterloo Exl Symposium, "Interdisciplinary Creativity" (with Jessica Thompson), *Feb 5, 2020*

SHAD Program, Sackville, NB, "Computer Vision", July 6, 2018

Intelligent Interaction Workshop, Montreal, "Intelligent Interaction Techniques"*, May 2018*

SACHI, St. Andrews University, "New Approaches to Mode-Switching"*, June 13, 2017*

Google Canada, Kitchener, "New Approaches to Mode-Switching"*, Apr 26, 2017*

Toronto User Experience (TUX) Member Presentation, "Expressive Interaction"*, Mar 28, 2017*

CLUE Seminar Series, Carleton University, Ottawa, "Expressive Interaction", *Jan 20, 2017*

University of Copenhagen, Denmark, "Expressive Interaction", *Jan 29, 2016*

CS4U Day (high school outreach), University of Waterloo, "Computer Vision", *Dec 7, 2015*

Thalmic Labs Lunchtime Seminar, Kitchener, "Human-Computer Interaction", *May 20, 2015*

Critical Media Lab, University of Waterloo, "Subtle Interaction and Art"*, Apr 15, 2015*

University of Saskatchewan, "Subtle Interaction and Art", *Aug 2014*

Kitchener Public Library, Canada, "Human-Computer Interaction"*, Feb 2014*

Owens Art Gallery, Sackville, NB, "Siftor and My Name is Owen"*, Mar 2013*

University of Waterloo, Canada, "Interacting without a Mouse"*, Oct 2010*

Baked Ham Speaker Series, Sackville, NB, "Digital Conte"*, Aug 2010*

Université Paris-Sud, France, "Hand Occlusion and Direct Input"*, Jun 2010*

EuraTechnologies, Lille, France, "Hand Occlusion and Direct Input"*, Jun 2010*

Mount Allison University, NB, "Direct Input on Very Large and Very Small Displays"*, Mar 2007*

Université de Lille, France, "Large Display Interaction"*, Oct 2006*

Mount Allison University, NB, "Interactive Public Ambient Displays"*, Feb 2005*

Conference Presentations

DIS 2016, Brisbane; CHI 2016, San Jose; UIST 2015, Charlotte; GI 2015, Halifax; CHI 2010, Atlanta; CHI 2009, Boston; CHI 2007, San Jose; UIST 2011, Santa Barbara; UIST 2006, Montreux; UIST 2005, Seattle; UIST 2004, Santa Fe

Teaching

Course Instructor

Note: All courses taught at University of Waterloo unless otherwise specified.

Computational Digital Art Studio, *Winter 2018, Winter 2019, Winter 2020, Winter 2022*
upper-level studio course to create computational art works, capstone course for Computer Science majors and Fine Art majors taking computation art option (CS/FINE 383)

User Interfaces, *Spring 2013, Fall 2017, Winter 2022*
3rd year computer science course in user interface programming (CS 349)

Human-Computer Interaction, *Fall 2022*
4th year computer science course in UX design (CS 449)

Intro to Computer Programming, *Fall 2014, Fall 2015, Fall 2016, Winter 2019, Fall 2020*
1st year non-Math majors, computer programming for interactive media (CS 105)

Advanced Human-Computer Interaction, *Winter 2018, Winter 2017, Spring 2015*
graduate special topics course on "Applied Computer Vision for HCI" (CS 889)

Intro to Computer Science II, *Winter 2016*
1st year course for non-CS majors using Scheme and Python (CS 116)

Advanced Human-Computer Interaction, *Spring 2012*
    graduate special topics course on "Advanced Interaction Techniques" (CS 889)

Computer Graphics, Mount Allison University, *Winter 2012*
    3rd year computer science course in computer graphics (COMP 3831)

Advanced Computer Graphics, *Fall 2011*
    graduate special topics course on "Aesthetics and Computer Graphics" (CS 899)

Computer Graphics, Mount Allison University, *Winter 2010*
    3rd year computer science course in computer graphics (COMP 3831)

Design of Interactive Computational Media, University of Toronto, *Fall 2006*
    3rd year computer science course in human-computer interaction (CSC 318)

Other

Programming for Artists Workshop, Struts Gallery and Artist Run Centre, *Fall 2012*
    weekend workshop for visual artists and technologists using the Processing language for
    algorithmic drawing using online data streams and computer vision

Algorithmic Drawing Workshop, Mount Allison University, *Winter 2012*
    2-day workshop for visual arts students, introduced graphic programming with the Processing
    language for algorithmic drawing and aesthetic manipulation of pen input

Self-directed Project Course, University of Toronto, *Summer 2010*
    supervised summer project course in requirements and design for online software
    held via weekly video conference meetings with two students

Teaching Assistant, University of Toronto, *Spring 2006, Spring 2004, Fall 2003*
    3rd year computer science course in human-computer interaction (CSC318)

Computer Camp Instructor, University of British Columbia, *1993*
    taught HyperCard animation and programming to children ages 8 to 12

Supervision

Post-doctoral

Ali Neshati, University of Waterloo, *May 2022 -*
    "Precise Barehand Input"

past

Quentin Roy, University of Waterloo, *May 2018 -*
    "Automation and Controllability, Novel Forms of Interaction"

Aakar Gupta, University of Waterloo, *Nov 2017 – Nov 2018*
    "Using Augmented Reality for Novel Input"

Hassan Khan, University of Waterloo, *Sep 2017 – Aug 2018*
    "Usable Security"
    co-supervision (with Urs Hengartner)

Fabrice Matulic, Posdoctoral Fellow, *May 2016 – July 2017*
    "Pen and Touch Input, Large Display Interaction"

Mathieu Nancel, Posdoctoral Fellow, *Mar 2014 – Aug 2015*
    "Clutching, Novel Input Techniques, Touch Prediction"

Graduate

Arman Hafizi, MMath, *Sep 2021 –*
"In-Vehicle Input"

Saralin Zassman Zinck, MMath, *Sep 2021 –*
"HCI and Traditional Art Media"

Cheryl Lao, MMath, *Sep 2020 –*
"Anamorphic Projection in Spatial Augmented Reality" *co-supervision (with Craig Kaplan)*

Alessandra Luz De Medeiros Ferreira, *PhD May 2020 -*
"Mobile applications for Eye Diseases"

Johann Wentzel, MMath, Sept *2018 – Apr 2020, PhD May 2020 -*
"VR Accessibility"

Nikhita Joshi, MMath, *Sep 2017 – Dec 2019, PhD Jan 2020 -*
"Interacting with Objects in Spatial Augmented Reality"

Ludwig Wall, PhD, Sept *2019 –*
"Human-in-the-loop Fabrication" *co-supervision (with Oliver Schneider)*

Damien Masson, *PhD Sep 2018 -*
"Augmenting Digital Documents" (co-advised with Géry Casiez and Sylvain Malacria)

Antony Albert Raj Irudayaraj, PhD, Sept *2018 –*
"Reconfigurable Physical Pixel Displays" *co-supervision (with Omid Abari)*

Matthew Lakier, PhD, Sept *2018 –*
"Ludic Interaction"

Yen-Ting (Allen) Yeh, PhD, *May 2018 –*
"Physical Interaction with Phones"

past

Graeme Zinck, MMath, *Sep 2020 – Aug 2022*
"Using Singing for Interaction"

Jeremy Hartmann, PhD, *Sep 2016 – Dec 2021*
"Interaction Techniques for Spatial Augmented Reality"

Margaret Foley, MMath, Sept *2018 – Aug 2020*
"Text Composition with Speech Input"

Hemant Surale, PhD, *Sep 2015 – Apr 2020*
"Mode Switching in Touch and Virtual Reality"

Blaine Lewis, MMath, *Jan 2017 – Aug 2019*
"Characteristics of Rehearsal-Based Interfaces"

Zhe Liu, MSc Applied Health Sciences, *May 2017 – Aug 2019*
"Investigating Fatigue on Large Touch Walls"
co-supervision (with James Wallace)

Jeff Avery, PhD, *May 2012 - 2018*
"Improving Pinch-to-Zoom"
co-supervision (with Ed Lank)

Noah Murad, MMath (Research Paper), *Sep 2018 – Jan 2019*
"Finger People"

Lisa Elkin, MMath, *May 2016 – May 2018*
   "Contact-sensing Input Device Manipulation and Expertise"

Terence Dickson, MMath, *Sep 2015 – Oct 2017*
   "A Hybrid Technique for Absolute and Relative Input on Interactive Walls"

Jingjie Zheng, MMath, *Sep 2014 – Aug 2017*
   "Subtle Interaction Enabled by Keyboard Finger Identification"

Qifan Li, MMath, *Sep 2014 – May 2016*
   "Improving Selfie Aesthetics with Interactive Guidance based on Empirical Models"

Mingyu Liu, MMath, *Sep 2013 – May 2015*
   "Designing Gunslinger: an Inter-modal Large Display Interaction"

Yuexing (Corona) Luo, MMath, *May 2013 – May 2015*
   "Touch Crossing-Based Selection and the Pin-and-Cross Technique"

William Saunders, MMath, *May 2013 – May 2015*
   "Foot Input for Desktop Applications"

Undergraduate

Daekun Kim, URA Research Assistant, *USRA URF Sep – Dec 2021, part time Sep 2020 -*
   "VR Depth Perception", "SAR Interactions"

past

Derrek Chow, URA Research Assistant, RA Co-op May - Aug 2021, part time *Sep 2020 - Aug 2021*
   "Super Todo", "Design Studies", "Experimental HCI"

Ziyann (Jimmy) Shan, USRA Research Assistant, *full time May – Aug 2019*
   "Augmented AR HMD"

Ningshan Ouyang, Research Assistant, *full time Jan – May 2019*
   "Super Todo"

Jian Jia, USRA Research Assistant, *full time Sep – Dec 2018*
   "Super Todo"

Dong (Sheldon) Xu, Research Assistant, *full time Sep – Dec 2018*
   "Side-touch"

Futian (Caesar) Zhang, Research Assistant, *full time Jul – Sep 2018*
   "Automation Accuracy versus Controllability"

Arjav Pankaj Patel, Research Assistant, *full time May – Aug 2018,*
   "Replicate and Reuse AR"

Borui Lin, Research Assistant, *part time May – Aug 2018,*
   "Replicate and Reuse AR"

Siyi Ji, Research Assistant, *part time May – Aug 2018,*
   "Replicate and Reuse AR"

Drini Cami, USRA Research Assistant, *full time May – Aug 2017, Jan – May 2018*
   "Unimanual pen and touch"

Kishor Prins Sudarshanakumar, Research Assistant, *part time Sep – Dec 2016*
   "Pointing using gaze, head tracking, and non-verbal audio"

Minyoung Yoo, Research Assistant, *part time Sep – Dec 2016*
   "Near Eye Display for Secure Input"

Tristan Hume, USRA Research Assistant, *full time Jan – May 2016*
   "Pointing using gaze, head tracking, and non-verbal audio"

Somayan Chakrabarti, Research Assistant, *full time Sep – Dec 2015*
   "Conté Mode Switching"

Shao-Yan Tan, USRA Research Assistant, *full time May– Aug 2015, part time Sep - Dec 2015*
   "Kinematic Log for Two-finger Transformations"

Blaite Han, Research Assistant, *part time May– Aug 2015*
   "Scripting and Visualizing Live Coding Demonstrations"

Qifan Li, Research Assistant, *part time Jan - Apr 2014*
   "Quantifying Aesthetics of Photographic Portraiture"

Faizan Haque, USRA Research Assistant, *full time Nov 2013 – Apr 2014*
   "Gestural Pointing using Electromyography and Inertial Motion"

Ray Sun, Research Assistant, *part time Sept - Dec 2013*
   "Errant Touches"

Yuexing Luo, MMath, *part time Jan - May 2013*
   CS 499 "Multi-touch Crossing"

Greg Legere, USRA Research Assistant, Mount Allison University, *full time May – Sep 2011*
   "Human-in-the-loop Classification of Diatoms"
   co-supervision (with Andrew Irwin)

Chris MacLeod, USRA Research Assistant, Mount Allison University, *full time May – Sep 2009*
   undergraduate research project: "Sensing Techniques for Large Public Display Input"
   co-supervision (with Liam Keliher)

Matthew Cudmore, USRA Research Assistant, Mount Allison University, *full time May – Sep 2008, May – Sep 2009*
   undergraduate research project: "Direct Pen Input and Occlusion"
   co-supervision (with Liam Keliher)

Mentoring

Teddy Seyed, University of Calgary, *2015 - 2017*
   PhD research: "interaction techniques for wearable and smartphone computing"
   mentoring (with Xing-Dong Yang, Dartmouth College)

Alix Goguey, PhD Globallink Exchange, *Jun. 2015 – Sep. 2015*
   "Subtle Interaction Enabled by Touchscreen Finger Identification"
   co-supervision (with Géry Casiez, Inria Lille, France)

Joshua Jung, University of Waterloo, *2017*
   mentoring: "Designable Markers"

Hassan Khan, University of Waterloo, *2015 - 2016*
   PhD research: "Implicit Authentication Usability and Mimicry"
   mentoring (with Urs Hengartner, advisor)

Shu Ke, Singapore Management University, *2012*
   masters thesis: "Errant Touches with Direct Input"
   mentoring (with Richard Davis, advisor)

Shehroz Kahn, University of Waterloo, *2012*
   research project: "Aesthetic Photographic Portraiture"

Alex Azad, University of Waterloo, *2011 - 2012*
> masters thesis: "Behaviour On and Around Large Displays"
> mentoring (with Ed Lank, advisor and Mark Hancock)

Residences and Internships

Visiting Researcher, INRIA / Université de Lille, France, *May – Jun 2010*
> "Hybrid device input for multi-touch tables" with Géry Casiez

Summer Research Internships, Microsoft Research, Redmond
> "Touch Screen Interaction" with Patrick Baudisch*, Summer 2006*
> "Automated Document Layout" with Maneesh Agrawala and David Salesin*, Summer 2004*

Artist Residency, Banff Centre for the Arts, *Jul – Aug 1998*
> studio residency in digital silkscreen printmaking

Service

Cheriton School of Computer Science

Graduate Recruiting Committee (GREC), *Chair Sep 2021 –*
> URF program, grad recruiting events

Waterloo-Huawei Joint Innovation Lab (WHJIL), *Jul 2020 –*
> Co-chair OF Human-Computer Interaction subcommittee

School Advisory Committee on Appointments (SACA), *Dec 2016 – May 2019*
> Responsible for recruiting new faculty members who will hold regular appointments

Undergraduate Academic Plans Committee (UAPC), *2013 – 2016, 2019-*
> Led effort to create new introductory programming course for arts students (2014)

UAPC Sub-committee Chair, *2015*
> Created new HCI Option for CS Majors

UAPC Sub-committee Chair, *2015*
> Created new Computational Art Option for CS Majors

University of Waterloo

Internal-External PhD Thesis Examiner

Judy Ehrentraut (supervised by Marcel O'Forman), "Disentangling the Posthuman: Broadening Perspectives of Human/Machine Mergers through Inter-relational Subjectivity", **Dept. of English, University of Waterloo, Nov 2019p**

Deltcho Vatlchanov (supervised by Colin Ellard), "Physiological and Affective Responses to Immersion in Virtual Reality: Effects of Nature and Urban Settings", **Dept. of Psychology, University of Waterloo, Aug 2013**

Research Ethics and Integrity Advisory Committee (REIAC), *2015 –*
> Represented the Faculty of Mathematics on a university wide committee to advise the Office of Research Ethics (ORE) on policy development and guidelines.

Electronically Assisted Marking RFP Adviser, *2014*
> Faculty of Mathematics committee to select and evaluate a new grading system

Expense System Selection Committee, *2012 – 2014*
> University wide committee to select, evaluate, and integrate a new expense claims system

External

External PhD Thesis Examiner

Adwait Sharma (supervised by Jürgen Steimle), "Design and Recognition of Microgestures for Always-Available Input, **Saarland University, July 2022**

Ali Neshati (supervised by Pourang Irani), "Data Visualization and Interaction on Smartwatch Small Screens", **Dept. of Computer Science, University of Manitoba, Dec 2021**

Paul Strohmeier (supervised by Kasper Hornbæk), "Shaping Material Experiences: Designing Vibrotactile Feedback for Active Perception", **Dept. of Computer Science, University of Copenhagen, Jun 2019**

Anders Markussen (supervised by Kasper Hornbæk), "Interacting On and Around Large Displays", **Dept. of Computer Science, University of Copenhagen, Jan 2016**

Andre Doucette (supervised by Carl Gutwin and Regan Mandryk), "Group Reaching over Digital Tabletops with Digital Arm Embodiments", **Dept. of Computer Science, University of Saskatchewan, Aug 2014**

Program Chairing

Conference on Human Factors in Computing Systems (CHI), Sub-Committee Co-Chair, *2017, 2018*

International Conference on Interactive Surfaces and Spaces (ISS), Panels Co-Chair*, 2016*

Symposium on User Interface Software and Technology (UIST), Posters Co-Chair*, 2014, 2015*

Program Committees

Conference on Human Factors in Computing Systems (CHI), *2013, 2016, 2021*

Symposium on User Interface Software and Technology (UIST)*, 2012, 2014, 2015, 2018, 2021, 2022*

Interactive Surfaces and Spaces (ISS), *2017, 2020, 2021*

Mobile HCI*, 2015*

Graphics Interface (GI), *2014, 2020*

Pervasive Displays (PerDis), *2014*

Interactive Tabletops and Surfaces (ITS), *2011, 2012*

Invited Panelist

Symposium on User Interface Software and Technology (UIST), Doctoral Consortium*, 2016*

Peer Reviewing

Conferences: ACM Conference on Human Factors in Computing Systems (CHI), ACM Symposium on User Interface Software and Technology (UIST), Graphics Interface (GI), UbiComp, SIGGRAPH, INTERACT, IEEE Symposium on 3D User Interfaces (3DUI), Designing Interactive Systems (DIS), Mobile HCI, Eurographics Data Visualization (EuroVis),

Journals: Transactions on Computer-Human Interaction Journal (ToCHI), Human-Computer Interaction Journal, International Journal of Human-Computer Interaction (IJHCI), International Journal of Human-Computer Studies (IJHCS), IEEE Computer Graphics and Applications (CGA), IEEE Transactions on Visualization and Computer Graphics (ToVCG)

Books: Morgan & Claypool Publishers

Grants: NSERC Discovery Grants, NSERC Collaborative Research and Development Grants (CRD), Mitacs Accelerate

other academic and cultural service

Steering Committee, CultureWorks, Mount Allison University, *2010 – 2012*
  SSHRC Aid to Small Universities Research Program (ASUP)

Board of Directors, Struts Gallery and Artist Run Centre, *2008 - 2012*
  served as president of the board from 2011 - 2012

Press

(representative sample only)

re: C78 PocketView

ACM News, *Oct 2021*

re: C59 Tip-Tap

CTV News, on-camera interview, *Nov 2019*

CBC Radio, interview, *Nov 2019*

re: C41 Modular Smartphone for Lending

MIT Technology Review, "This 3-in-1 Phone Will Make You Want to Share It with Strangers", *Oct 2017*

ZDNet, "Here's the 3-in-1 modular lending phone: Could it really be the way ahead?", *Oct 2017*

re: C39 Guided Selfie

BBC World Service, live interview, *Aug 2017*

CTV News, video conference interview, *Aug 2017*

German Public Radio, interview "Selfie-App für Selbstdarsteller", *Aug 2017*

Kitchener-Waterloo Record, article w/ quotes "UW app helps perfect the selfie", *Aug 2017*

Refinery29, article w/ quotes "How to Take the Perfect Selfie, According to Science", *Aug 2017*

Daily Mail, article w/ quotes "Canadian scientists create an app for the perfect selfie", *Aug 2017*

Various articles on: Engadget, Digital Times, Android Headlines, Gizmodo, etc.

re: C37 Cito Actuated Watch

Digital Trends, "This Absurdly Overengineered Smartwatch Crawls, Tilts, and Slides on Your Wrist", *May 2017*

Economic Times, "You will love to flaunt this smartwatch, it does more than you can", *May 2017*

Many more on: Android Headlines, TechRadar, Wareable, Gizbot, Slashgear, etc.

re: C33 Tap-Kick-Click

R&D Mag, "Tap-Kick-Click Your Way to Physically Active Computing", *Jun 2016*

Seeker, "Cyberslackers: Tap, Kick Your PC to Health", *Jun 2016*

re: C32 Finger-Aware Shortcuts

Gizmodo, "The Keys on This Keyboard Respond Differently to Every Finger", *May 2016*

Gizmag, "Keyboard shortcut tech keeps an eye on your fingers", *May 2016*

Digital Trends, "Could posture-based inputs soon replace keyboard shortcuts?", *May 2016*

re: C31 Doppio Tangible Smartwatch

Gizmodo, "A Multi-Screen Smartwatch Might Actually Be a Brilliant Idea", *May 2016*

Slashgear, "Doppio: a smartwatch prototype with a removable 2nd screen", *May 2016*

Android Community, "Researchers working on dual-screen smartwatch", *May 2016*

Science Daily, "Dual screen smartwatch unveiled", *May 2016*

Gizmag, "Experimental smartwatch has a movable second screen", *May 2016*

Times of India, "Now a smartwatch with two displays", *May 2016*

SlashGear, "Doppio: a smartwatch prototype with a removable 2nd screen", *May 2016*

re: A17 Siftor art exhibition

CBC Radio, Spark, interview on "Listen, Touch, Command", *Apr 2013*

CBC News, "Will gesture controls replace your mouse and keyboard?" *Apr 19, 2013*

Times and Transcript, "Dan Vogel's exhibit – the future of art galleries?", *Mar 2013*

HERE NB, "An Experiment in Digital Art", *Mar 2013*

Telegraph Journal, Feature article in Salon Arts, *Mar 2013*

CBC Radio, Information Morning, interview on "Byte Sized Art", *Mar 2013*

various

MIT Technology Review, invited commentary on "The Invisible iPhone", *May 2011*

CBC Radio, Information Morning, "Computer Art Show", *Nov 2010*

ERCIM News, "RubberEdge", *Apr 2008*

MIT Technology Review, "Precision Pointing with Fat Fingers", *May 2007*

ComputerWorld, "Microsoft Research tackles mobile touch-screen problems", *May 2007*

CBC Radio Ideas, "By Design: The Politics of Everyday Objects", *Jun 2006*

Mix Magazine, "Artist Run Portfolio: Fax Sux", *Sep 1995*

MuchMusic Television, "Fax: Hydromedia", *Apr 1995*; "Speed Kills", *Apr 1995*

Portfolio

research and artwork portfolio available
http://www.nonsequitoria.com