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: 2013/06/15

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Collins	Christopher	MP	216130

☐ 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: Assistant Professor

Department: Science, Faculty of

Campus:

Canadian postsecondary institution: Ontario Institute of Technology

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
Bachelor's	Joint Honours, Chemistry/Computer	Memorial Univ. of Nfld	CANADA	2001 / 04
Master's	Computer Science	Toronto	CANADA	2003 / 12
Doctorate	Computer Science	Toronto	CANADA	2009 / 12

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		1	5	6	12
Master's	2	1	1		4
Doctoral					
Postdoctoral					
Others	1		1	2	4
Total	3	2	7	8	20

Personal information collected on this form and appendices will be stored in the Personal Information Bank for the appropriate program.

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Version française disponible

Not Completed

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

Position held (begin with current)	Organization	Department	Period (yyyy/mm to yyyy/mm)
Assistant Professor	Ontario Institute of Technology	Science, Faculty of	2010/01
Graduate Research Intern	IBM TJ Watson Research Center	Visual Communications Lab	2008/06 to 2008/09
Graduate Research Intern	IBM TJ Watson Research Center	Intelligent Multimedia Interaction	2007/06 to 2007/09
President	Graduate Students' Union		2002/09 to 2003/09
Teaching Assistant	University of Toronto	Department of Computer Science	2001/09 to 2006/12
Research Assistant	Memorial University of Newfoundland	Thermochemistry	1997/09 to 2001/05

Personal identification no. (PIN)	Family name
216130	Collins

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			
Christopher Collins	UOIT Start-up Funds	30,000 30,000	2010 2011
Christopher Collins	Research Chair in Information Visualization (funding used for my base salary, not research) SharcNet Research Chairs Program 8 hours/month	80,000 80,000	2010 2011
Christopher Collins	Text Mining and Interface Design for Innovation Software Fed Dev Ontario Industry Collaboration Research Grants 8 hours/month	74,891	2011
Jeremy Bradbury and two others	Laboratory for Human-Centered Computer Science Research CFI Leaders Opportunity Fund 5 hours/month	43,000 (33%)	2012

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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			
Tory, Melanie and 6 others	Personal Visual Analytics (funding for cross-Canada collaboration and in-person workshop) US Department of Homeland Security VACCINE Seed Projects 1 hours/month	52,000 (10%)	2012
Christopher Collins	Surface-Based Text Analysis through Descriptive Rendering NSERC SurfNet Research Network Special Projects Grants 6 hours/month	20,000	2012
b) Support currently held			
Christopher Collins	Information Visualization for Large-Scale Text and Mixed Data NSERC Discovery Grant 20 hours/month	25,000 30,000 30,000 25,000 25,000	2010 2011 2012 2013 2014
Lennart Nacke and two others	Robust Quality Assessment of Social Media Classroom Participation UOIT Teaching Innovation Fund 2 hours/month	7,146 (25%)	2012

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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.			
b) Support currently held			
Christopher Collins	Breaking the "Wall of Grey" for Struggling Readers Fed Dev Ontario Industry Collaboration Research Grants 8 hours/month	119,797	2012
Christopher Collins	Exploration of High Dimensional Data Using Direct Manipulation NSERC SurfNet Research Network Special Projects Grants 6 hours/month	25,000	2013
Kellogg Booth + 49 Others	GRAND: Graphics Animation and New Media NSERC Network Centres of Excellence 2 hours/month	4,600,000 (1%)	2013
Melanie Tory + 3 others	Customizable Visual Analytics for Personal Use NSERC CRD	99,000 (22%) 99,000 (22%) 99,000 (22%)	2013 2014 2015

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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.			
c) Support applied for			
Christopher Collins	Deconstructing Debates: Linked Data in Political and Legal Discourse NSERC Digging into Data 10 hours/month	62,840 61,240	2013 2014
Christopher Collins	Linguistic Information Visualization NSERC Canada Research Chairs, Tier II 30 hours/month	100,000 100,000 100,000 100,000 100,000	2013 2014 2015 2016 2017

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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.

Personal identification no. (PIN)	Family name
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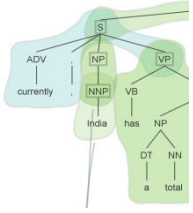
Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Mariana akemi	Undergraduate (In Progress)	Co-supervised 2013 - 2014	Investigation of Automatic Abbreviations of Graph Labels	student
Brittany Kondo	Master's (In Progress)	Supervised 2012 - 2014	Direct Manipulation for Time-Varying Visualizations	student
Erik Paluka	Master's (In Progress)	Supervised 2012 - 2014	Visualization of Software Logging Events	student
Zachary Cook	Res. Associate (In Progress)	Supervised 2012 - 2013	SurfNet Research Intern - Simple Multitouch Toolkit	research assistant under co-op program in my lab
Rafael Veras Guimaraes	Master's (In Progress)	Co-supervised 2011 - 2013	Uncovering Semantic Patterns in Passwords	student
Swapan Lobana	Undergraduate (Completed)	Co-supervised 2012 - 2012	Extracting English Words from Real Passwords	unknown
Benjamin Waters	Undergraduate (Completed)	Co-supervised 2011 - 2012	Optimizing Mutation Testing with Visualization	Software developer, Fast Enterprises
Brittany Kondo	Undergraduate (Completed)	Supervised 2011 - 2012	An Online Document Visualization System	Master's Student at UOIT
Erik Paluka	Undergraduate (Completed)	Supervised 2011 - 2012	The Simple Multitouch Toolkit	Master's Student at UOIT
Rouzbeh Farahmand	Technician	Supervised 2011 - 2012	Text Mining and Interface Design for Innovation Software	Lead Developer, The Enginuity Group
Chang, Meng-Wei	Master's (Completed)	Supervised 2010 - 2012	Surface-Based Text Analysis through Descriptive Rendering	Visualization developer, Ontario Cancer Institute
Jeffrey Hickson	Undergraduate (Completed)	Co-supervised 2011 - 2011	Extracting English Words from Real Passwords	unknown
Tony Tran	Undergraduate (Completed)	Supervised 2010 - 2011	A Tabletop Game to Support Tandem Language Learning	unknown
Chicoine, Bradley	Undergraduate (Completed)	Co-supervised 2010 - 2010	An Online System for Visualizing UOIT Class Schedules	IT support at Durham College
Gowritharan Maheswara	Undergraduate (Completed)	Co-supervised 2010 - 2010	Thread Interleaving Visualization	Software QA Engineer, McAffee Inc.
Vlaming, Luc	Dutch Diplom (Completed)	Co-supervised 2009 - 2010	Mixed 2D and 3D Touch Interaction for VisLink on	Software engineer, DySi Corporation
Szeto, Jessica	Undergraduate (Completed)	Co-supervised 2008 - 2009	BlogBars: Visualizing Word Usage Patterns of Different Sourc	unknown

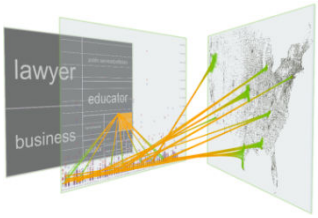
1. Most Significant Research Contributions

Charting a New Course: Bridging the Linguistic Visualization Divide [PhD Diss, L3, L1, U4-1] When I began my studies there were only a handful of foundational contributions on visualizing language, most of which used text mining at the simplistic level of word-counting. The natural language processing (NLP) community did not leverage the power of interactive visualization. I characterize this situation as the "Linguistic Visualization Divide." I have since become known as one of the pioneers charting a new course to help the world deal with linguistic information overload. First tier annual conferences such as IEEE InfoVis now regularly offer sessions on visual text analytics (I chaired these sessions in 2009 and 2010). I co-organized a full-day IEEE InfoVis workshop on text visualization in 2011. In order to actively promote further integration of linguistically-sophisticated algorithms and visual interfaces, in 2008 I lead the development of and co-presented a tutorial at the ACL Conference, the top international conference for NLP researchers. An extended week-long version of the course was offered at ESSLLI in Bordeaux in 2009 and a modified version was offered to digital humanities scholars in Toronto in 2011. **I have spoken on this topic at many invited lectures, from the University of Konstanz to Microsoft Research, from Google Headquarters to Duke University, and as a keynote speaker at the European meeting of the ACL in 2012 and Sharcnet Research Day in 2013.**

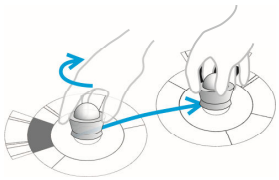
DocuBurst: Visualizing Document Content using Language Structure [J3, S2, S1, M1] This project co-published as a journal and conference paper, started as a term project for my first information visualization course. The main contribution of this project is the idea of merging human-designed structures of language with statistically gathered information. The project was profiled on the popular blog *Infosthetics* and as a result was featured in a full page article with two images in the weekend edition of the *Toronto Star*, along with on-air media interviews. The response from the research community has been equally exciting, drawing attention to the need to interactively link text visualizations to the source text. While it seems obvious, this was often not done. I have been approached by many organizations, including NATO's legal department, interested in using DocuBurst for their own document repositories. Teachers have contacted me for permission to use the software as a classroom literacy tool. Due to the strong interest, along with HQP, I reimplemented and extended DocuBurst in HTML5 and Javascript so that people could upload their and analyze their own documents. A long term deployment study is in progress (see http://vialab.science.uoit.ca/docuburst). The technique has been **featured, with images, in 3 books**, including the widely read textbooks *Search User Interfaces* by Marti Hearst (2009) and *Interactive Data Visualization* by Matthew Ward, Georges Grinstein, and Daniel Keim (2010).



Bubble Sets [J4, S3] Bubble Sets was originally developed to ease the analyses tasks of machine translation (MT) researchers at the ISI, University of Southern California. The Bubble Sets algorithms merge flow map design and iso-contour discovery to contribute a new, general, visualization method for visualizing set relations atop existing visualizations without disrupting existing spatial layouts. Prior to Bubble Sets, in order to display set relations using enclosure methods, layout adjustments were necessary to bring set members into close proximity, or the set boundary would inappropriately include non-set members. Our paper also demonstrated Bubble Sets to clarify set relations over scatter plots, network diagrams, and geographic maps. Dr. Martin Wattenberg, a prolific and respected researcher in the InfoVis community, noted online, "prediction: Bubble Sets work by Chris Collins will inspire a lot of follow up work". I provided software to Microsoft, which lead to the LineSets technique as a direct follow-up. I collaborated with researchers at the University of Konstanz to release an open-source implementation. The technique has been **cited 58 times in 2.5 years** and **my code was used as a major component in both the best paper and the runner-up best paper** at the IEEE BioVis Symposium in 2011, showing the applicability to bioinformatics. It is **featured with a full page image in Colin Ware's book, *Information Visualization: Perception for Design (3rd Ed)***, a fixture on visualization bookshelves and **the most popular visualization textbook on Amazon.com**.



VisLink: Revealing Relations Amongst Visualizations [J1,C7] VisLink is a new way to link multiple heterogeneous 2D visualizations, freeing the perceptually significant spatial visual dimension for re-use, enabling more powerful information analysis. Our paper in the proceedings of IEEE InfoVis was reprinted in IEEE TVCG (JCR impact factor 2.445, a top-10 ranked computer science journal). Dr. Ben Shneiderman (CHI lifetime achievement awardee, Fellow of the ACM) commented to the InfoVis attendees that, despite his general scepticism about 3D graphics, he thought VisLink was "beautiful" and "got it right". I have been approached by researchers from universities such as UC Berkeley and industry labs such as Dow Chemical to apply the technique in areas as varied as literary analysis, genetics, and data forensics. VisLink was featured as a "harbinger of the future" in Dr. Georges Grinstein's keynote lecture on the future of visualization, presented at the 12th Int. Conf. on Information Visualisation (IV 2008) and at university and industry labs around the world. VisLink has advanced the training of HQP, both locally and internationally. Diplom student Luc Vlaming designed new, generalizable, touch-screen interaction techniques to bring VisLink to interactive touch displays. Re-implementing the VisLink technique has become a graduate course project at universities as far away as TU Vienna (e.g., http://bit.ly/3mABGp). **Our paper has been cited over 75 times and is required reading in at least 5 North American InfoVis courses.**



Multi-touch Interfaces for Information Visualization [C9, C7, C6, C3, S4] I have contributed a series of important research papers in the area of multi-touch and tabletop computing, focusing interaction techniques for working with visualizations. Along with collaborators, I published a survey paper on text entry techniques for tabletop displays, including a set of guidelines for choosing appropriate text entry techniques for a variety of situations [C3] **which has been cited 48 times**. I have studied adaptations of existing techniques for tabletop displays, including a study of using DocuBurst diagrams with a specially designed tangible device (the *DocuDial*) [C6] and a method of using multiple on screen virtual mice (with embedded lenses) for working with VisLink in a multi-touch environment [C7]. Recently, HQP Meng-Wei Chang, **the first graduate student to graduate under my sole supervision, published his thesis research on *Descriptive Non-photorealistic Rendering* at the IEEE PacificVis 2013 Conference (acceptance rate 28.8%)** [C9]. Supported by the NSERC Strategic Network SurfNet, Meng-Wei's work is designed for a large touch display and includes interaction techniques for working with coordinated visualization widgets ("VisGets" [J2]) and a 3D model through multi-touch. I continue to work along this theme, including leading the development of an **official multi-touch library for the popular Processing language [S4]** which is used in teaching and research at UOIT and U Waterloo.

2. Research Contributions and Practical Applications *(advised HQP underlined)*

Often, members of a research team may contribute in ways which are not reflected in author order due to conventions in the research culture. To clarify, my contribution in collaborative work varies from primary researcher and author (J1, J3, J4, C5, C2, S1), lead author in a collaboration (U1), primary supervisor (C9, O3, S3, S2, I2, I1), co-supervisor (C8, C7, S4) a co-author who made a significant contribution (J6, J5, J2, C6, C4, C3, C1, W2, U2), and a co-author who made an advisory or supporting contribution (W1). Where known, JCR impact factors [IF], conference acceptance rates [AR], and citation counts from scholar.google.com [GS] are listed after publication details. Note that in computer science, publications at top conferences are peer-reviewed and are the primary way to disseminate results.

2.1 Refereed Contributions

Refereed Journal Articles [3–4 reviews, 2 stage process]

J6 Zhao, Jian; Chevalier, Fanny; Collins, Christopher; Balakrishnan, Ravin. Interactive Exploration of Implicit and Explicit Relations in Faceted Datasets. *To Appear in IEEE Transactions on Visualization and Computer Graphics (Proc. of the IEEE Conference on Visual Analytics Science & Technology (VAST '13))*

J5 Zhao, Jian; Chevalier, Fanny; Collins, Christopher; Balakrishnan, Ravin. **Facilitating Discourse Analysis with Interactive Visualization.** *IEEE Transactions on Visualization and Computer Graphics (Proc. of the IEEE Conference on Information Visualization (InfoVis '12))*, Nov–Dec 2012.

J4 Collins, Christopher; Penn, Gerald; Carpendale, Sheelagh. **Bubble Sets: Revealing Set Relations with Isocontours over Existing Visualizations.** *IEEE Transactions on Visualization and Computer Graphics (Proc. of the IEEE Conf. on Information Visualization (InfoVis '09)),* 15(6), Nov–Dec 2009. ***(AR: 37/142=26%; IF: 2.445; GS: 57)***

J3 Collins, Christopher; Carpendale, Sheelagh; Penn, Gerald. **DocuBurst: Visualizing Document Content Using Language Structure**. Computer Graphics Forum (*Proc. of the Eurographics/IEEE VGTC Symp. on Visualization (EuroVis '09)),* 28(3): pp. 1039–1046, Berlin, Germany, June 2009. ***(AR: 43/143=30%; IF 1.476; GS: 65)***

J2 Dörk, Marian; Carpendale, Sheelagh; Collins, Christopher; Williamson, Carey. **VisGets: Coordinated Visualizations for Web-based Information Exploration and Discovery.** *IEEE Transactions on Visualization and Computer Graphics (Proc. of the IEEE Conf. on Information Visualization (InfoVis '08)),* 14(6): pp. 1205–1213, Nov–Dec 2008. ***(AR: 28/106 = 26.4%; IF:2.445; GS: 69)***

J1 Collins, Christopher; Carpendale, Sheelagh. **VisLink: Revealing relationships amongst visualizations.** *IEEE Transactions on Visualization and Computer Graphics (Proc. of the IEEE Symp. on Information Visualization (InfoVis '07)),* 13(6): pp. 1192–1199, Nov–Dec 2007. ***(AR: 27/114 = 23.6%; IF:2.445; GS: 77)***

2.2 Other Refereed Contributions

Conference Papers: Full Length, Fully Refereed [3-5 reviews, 2 stage process]

C9 Chang, Meng-Wei; Collins, Christopher. **Exploring Entities in Text with Descriptive Non-Photorealistic Rendering.** *Proc. of the IEEE Pacific Symposium on Visualization (PacificVis).* Sydney, Australia, February, 2013. *(AR: 34/118=28.8%)*

C8 Veras, Rafael; Thorpe, Julie; Collins, Christopher. **Visualizing Semantics in Passwords: The Role of Dates.** *Proc. of the ACM Symposium on Visualization for Cyber Security (VizSec).* Seattle, USA, October, 2012. *(AR: 12/21=57%)*

C7 Vlaming, Luc; Collins, Christopher; Hancock, Mark; Nacenta, Miguel; Isenberg, Tobias; Carpendale, Sheelagh. **Integrating 2D Mouse Emulation with 3D Manipulation for Visualizations on a Multi-Touch Table**. *Proc. of the ACM Int. Conf. on Interactive Tabletops and Surfaces (ITS '10)*, Saarbrücken, Germany, November, 2010. *(AR: 19/68=28%; GS: 4)*

C6 Hancock, Mark; Hilliges, Otmar; Collins, Christopher; Baur, Dominikus; Carpendale, Sheelagh. **Exploring tangible and direct touch interfaces for manipulating 2D and 3D information on a digital table.** *Proc. of the ACM Int. Conf. on Interactive Tabletops and Surfaces (ITS '09). (AR: 22/80=28%; GS: 18)*

C5 Collins, Christopher; Viégas, Fernanda; Wattenberg, Martin. **Parallel Tag Clouds to explore and analyze faceted text corpora**. *Proc. of the IEEE Symp. on Visual Analytics Science and Technology (VAST '09). (AR: 26/69=38%; **GS: 53)***

C4 Blume, Lil; Baecker, Ron; Collins, Christopher; Donohue, Aran. **A "Communication Skills for Computer Scientists" course**. *Proc. of the ACM Conf. on Innovation and Technology in Computer Science Education*, Paris, France, July, 2009. *(AR: 66/205=32%; GS: 7)*

C3 Hinrichs, Uta; Hancock, Mark S.; Collins, Christopher; Carpendale, Sheelagh. **Examination of text-entry methods for tabletop displays.** *Proc. of 2nd IEEE Int. Workshop on Horizontal Human-Computer Systems (Tabletop 2007),* pp. 105–112. Newport, USA, October 2007. *(AR: 28/86=33%; **GS: 48)***

C2 Collins, Christopher; Carpendale, Sheelagh; Penn, Gerald. **Visualization of uncertainty in lattices to support decision-making.** *Proc. of Eurographics/IEEE VGTC Symp. on Visualization (EuroVis)*, pp. 51–58. Norrköping, Sweden, May 2007. *(AR: 38%; GS: 8)*

C1 Baecker, R.; Fono, D.; Blume, L.; Collins, C. (2007) **Webcasting made interactive: Persistent chat for text dialogue during and about learning events**. *Proc. of HCI International 2007*. Also in *Lecture Notes in Computer Science*. Volume 4558/2007, pp. 260–268, Springer. (GS: 6)

Workshop Papers: Full-length, Refereed [3 reviews, 1 stage process]

W2 Dörk, Marian; Feng, Patrick; Collins, Christopher; Carpendale, Sheelagh. **Critical InfoVis: Exploring the Politics of Visual Representation.** ***Proceedings of Alt.CHI at the ACM Conference on Human Factors in Computing Systems (CHI), 2013. (Full paper with conference presentation, uses open reviewing process online).***

W1 Isenberg, Petra; Zuk, Torre; Collins, Christopher; Carpendale, Sheelagh. **Grounded evaluation for information visualizations.** *Proc. of Beyond Time and Errors: Novel Evaluation Methods for Information Visualization, a workshop of the ACM CHI Conference.* Article No. 6. Florence, Italy, 2008. ***(GS: 44)***

2.3 Non-Refereed Contributions

Tutorials and Workshops Organized

U4 Collins, Christopher; Kandogan, Eser; Liu, Shixia; Zhou, Michelle**. IEEE International Workshop on Visual Text Analytics to Support Decision-Making.** Full day workshop at the *IEEE Conference on Information Visualization (InfoVis '11).* October, 2011. [http://www.textvis.org]

U3 Boyd, Jason; Collins, Christopher; Trevianus, Juta; Garrett, Frances; Ratto, Matt. **The Humanities and Technology Camp (THATCamp GTA)**. *2 day 'unconference' on digital humanities.* October, 2011. [http://gta2011.thatcamp.org/]

U2 Carpendale, Sheelagh; Penn, Gerald; Collins, Christopher. **Interactive Visualization for Computational Linguistics.** Short course (1 week) at the *European Summer School in Logic, Language, and Information (ESSLLI '09)*. August, 2009.

U1 Collins, Christopher; Carpendale, Sheelagh; Penn, Gerald. **Interactive Visualization for Computational Linguistics.** Tutorial at the *Annual Meeting of the Association for Computational Linguistics* (ACL '08). 26 participants. June, 2008.

Software

S4 Cook, Zachary; Paluka, Erik; Hancock, Mark; Collins, Christopher. 2013. **Simple Multi-touch Toolkit**. Open source toolkit to support multitouch prototyping in the Processing programming language. [github.com/vialab/SMT]

S3 Collins, Christopher; Krause, Josua. 2011. **Bubble Sets.** Open source standalone implementation, with extensions. [https://github.com/JosuaKrause/Bubble-Sets]

S2 Chicoine, Bradley; Kondo, Brittany; Collins, Christopher. 2011. **Docuburst Online.** Web version of the DocuBurst visualization, with extensions. [http://vialab.science.uoit.ca/docuburst]

S1 Collins, Christopher. 2009. **Radial Space Filling Trees for prefuse.** Java source code.

Invited Speaking Engagements (selected)

L3 **Humanizing Big Data: Enabling Insight with Information Visualization**. *Keynote Address, Sharcnet Research Day*. Toronto, Ontario, Canada. May 16, 2013.

L2 **Designing Multiple Relation Visualizations: Case Studies from Text Analytics**. *Invited Visualization Colloquium*, Duke University. Invited by Dr. Eric Monson and Angela Zoss, Raleigh, North Carolina, USA. April 5, 2013. [http://blogs.library.duke.edu/data/2013/03/28/collins-visit/]

L1 **Bridging the Linguistic Visualization Divide**. *Keynote Address, European Association of Computational Linguistics Joint Workshop on Visualization of Linguistic Patterns and Uncovering Language History from Multilingual Resources*, Avignon, France, April 23, 2012. [https://sites.google.com/site/lingvisunclh/]
Versions also given at: Google World Headquarters, IBM TJ Watson, Microsoft Research, York University, Duke University, Stanford University, and the University of Konstanz (Germany) since 2010.

2.4. Contributions to Practical Applications (Industrial R&D)

I2 Collins, Christopher; Farahmand, Rouzbeh. 2012. **Semi-automatic Taxonomy Creation over a Document Collection using Document Clustering and Key Phrase Extraction.** *UOIT Invention Disclosure and Industrial Contribution to The Enginuity Group.*

I1 Collins, Christopher; Kondo, Brittany; Chang, Meng-Wei. 2012. **Awareness Rings, X-Tray View, Similarity View, and Social Facets for Collaborative Document Analysis**. *UOIT Invention Disclosure and Industrial Contribution to The Enginuity Group*.

3 Other Contributions

Popular Media Coverage (selected)

M1 Bigge, Ryan. "You are looking at an open book", *Toronto Star,* June 10, 2007. [Full page of 'Ideas' section in Canada's most widely circulated daily newspaper. (1595 words; 2 images).]

Professional Service Activities (selected)

Research Community Leadership

Executive Committee, IEEE Visualization & Graphics Technical Committee (2011-2013)
IEEE InfoVis: Publicity Chair (2010, 2011), Workshops Chair (2012), BOF Chair (2013)

Program Committee

GI (2011), **IEEE InfoVis** (2013, 2011, 2010, 2009), **CHI Works-in Progress** (2009)

Conference Reviewing (year[number of articles])

Pacific Vis (2010[3], 2012[1]), **ACM CHI** (2010[4], 2011[3]), **ACM ITS** (2008[1], 2010[3]), **ACM TEI** (2011[1]), **EuroVis** (2008[1], 2009[2], 2010[2], 2011[3], 2012[2], 2013[3]), **ACM CHI Student Design Competition** (2007[3], 2008[3], 2009[3]), **IEEE InfoVis** (2005[1],2006[1],2007[2],2008[6],2009[8],2010[9],2011[9], 2012[4], 2013[7]), **IEEE VAST** (2006[1], 2009[2],2012[2]), **ACM SIGGRAPH** (2006[1])

Journal Reviewing (year[number of articles])

IEEE Trans. on Visualization and Computer Graphics (2009[1], 2010[2], 2012[1]), **IEEE Trans. on Intelligent Systems Tech.** (2010[1]), **Int. J. on Computer Games Technology** (2011[1]), **ACM Trans. on HCI** (2011[1])

Grant Reviewing (year[number of articles])

CFI LOF (2010[1]), **NSERC SPG** (2011[1]), **NSERC CRD** (2011[1]), **NSERC Discovery** (2011[1], 2013[1]), MITACS Accelerate (2010[1]), **Canada Research Chairs** (2013[1])

5. Contributions to Training of HQP

I am currently supervising five HQPs (3 MSc, 1 BSc, 1 Research Assistant). My lab has been expanding, and the number of graduate students has been increasing by approximately one per year. I plan to take on my first PhD student in September, 2013. I am actively recruiting to expand my nascent laboratory, which moved in 2012 into a new custom-designed facility with significant new equipment, improved furnishings, and more space (funded by NSERC and CFI). Undergraduate research experiences are a major part of the UOIT computer science program. Over my first two years at UOIT, I have supervised three and co-supervised six undergraduate honours students. In 2011-2013, 6 HQP in my lab had opportunities to work with my industry partners *Enginuity Group* and *Quillsoft.*

In addition to lab research supervision, I have teaching responsibilities at UOIT. I use the classroom as an opportunity to engage HQP in research related-discussions. This is most apparent in my fourth year human computer interaction course, in which teams of students conduct field research in the community, and prototype interface solutions for real world problems. In the 2011 offering of the course, students worked with natural user interface technology (a tabletop display) from my research lab as part of the course. I encourage the best students to extend and submit their course work for publication. Beyond computer science training, I have collaborated in the development of leadership seminars and diversity-related training for HQP (staff and students).

My approach to HQP is modeled after the example of my co-supervisor Dr. Sheelagh Carpendale (the recipient of University of Calgary's 'Supervisor of the Year' award in 2009). Through many conversations with her about supervisory styles and experiences, I have begun to form a philosophy of how train HQP, based on a "scaffolding" approach. I will actively support and motivate students and other HQP during their initial period in my lab, eventually transitioning to a more hands-off approach, which will provide room for growth and teamwork, and challenge HQP to develop as independent researchers.

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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: 2013/06/15

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Collins	Christopher	MP	216130

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

If address is temporary, indicate:

Starting date

Leaving date

Telephone number	Facsimile number	E-mail address
1 (905) 7218668 6581	(905) 7213304	christopher.collins@uoit.ca

Telephone number (alternate): 1 (647) 2401076

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

Gender (completion optional): [X] Male [ ] Female

LANGUAGE CAPABILITY

English	Read [X]	Write [X]	Speak [X]
French	Read [X]	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).

Information Visualization, Human-Computer Interaction, Natural Language Processing, Interaction Design, Computer-Supported Cooperative Work, Visual Analytics, Interactive Surfaces, Graphics, Computational Linguistics, Tabletop Displays

Research subject code(s)

Primary: 2700

Secondary: 2707

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 Collins, Christopher MP

Department	Postsecondary Institution
Science, Faculty of	Ontario Institute of Technology

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.