



**FORM 100**  
**Personal Data Form**  
**PART I**

Date

~~2010/02/20~~

Family name <b>Shaw</b>	Given name <b>Christopher</b>	Initial(s) of all given names <b>D</b>	Personal identification no. (PIN) <b>Valid 195175</b>
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☐ 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 <b>Associate Professor</b>	Tenured or tenure-track academic appointment Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Department <b>Interactive Arts and Technology, School of (SIAT)</b>	Part-time appointment <input type="checkbox"/> Full-time appointment <input checked="" type="checkbox"/>
Campus <b>Surrey</b>	<ul style="list-style-type: none"><li>For all non-tenured or non tenure-track academic appointment and Emeritus Professors, complete Appendices B &amp; C</li><li>For life-time Emeritus Professor and part-time positions, complete Appendix C</li></ul>
Canadian postsecondary institution <b>Simon Fraser</b>	

**ACADEMIC BACKGROUND**

Degree	Name of discipline	Institution	Country	Date yyyy/mm
Bachelor's	Computer Science w/ Electrical Engineering	Waterloo	CANADA	1986/08
Master's	Computing Science	Alberta	CANADA	1988/08
Doctorate	Computing Science	Alberta	CANADA	1997/05

**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			20		20
Master's	3	2	7	1	13
Doctoral	2		1	1	4
Postdoctoral					
Others			2		2
Total	5	2	30	2	39

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Shaw

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

Position held (begin with current)	Organization	Department	Period (yyyy/mm to yyyy/mm)
Associate Professor	Simon Fraser	Interactive Arts and Technology, School of (SIAT)	2005/08
Senior Research Scientist	Georgia Institute of Technology	College of Computing	2001/01 to 2005/08
Visiting Scientist	Georgia Institute of Technology	College of Computing	2000/01 to 2000/12
Director	University of Regina	Institute for Computational Discovery	1999/08 to 2000/07
Visiting Scientist	University of Washington	Human Interface Technology Laboratory	1996/05 to 2000/07
Assistant Professor	University of Regina	Computer Science	1996/01 to 2000/07
Teaching Assistant	University of Alberta	Computing Science	1990/08 to 1995/08
Lecturer	University of Alberta	Computing Science	1989/01 to 1989/04
Manager of Computer Graphics Lab	University of Alberta	Computing Science	1988/09 to 1990/09

Personal identification no. (PIN)

**Valid** 195175

Family name

Shaw

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

Position held (begin with current)	Organization	Department	Period (yyyy/mm to yyyy/mm)
Software Consultant	Research in Motion (RIM)		1987/05 to 1987/09
Teaching Assistant	University of Alberta	Computing Science	1986/09 to 1988/08
Research Assistant	University of Waterloo	Computer Science	1985/05 to 1985/08
Co-Founder, VP Software	Research in Motion (RIM)		1984/05 to 1985/04

**Support currently held**

Applicant(s)	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure
Christopher D Shaw	Highly Interactive 3D User Interfaces NSERC Discovery Grants Program – Individual 10 hours/month	24,000	2010-2015
Christopher D Shaw	GRAND NCE Allocation	\$45,000	2010-2015
Linda LI, Christopher Shaw, and 6 others	ANSWER-2: A biologic decision aid for patients with rheumatoid arthritis CIHR: Musculoskeletal Health and Arthritis 10 hours/month	\$100,000 (20%)	2013-2014

## 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) <b>Valid 195175</b>	Family name <b>Shaw</b>
Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
Alimadadi, Saba	Master's (In Progress)	Supervised 2010 -	Dependency Graph Visual History	SIAT Grad Student
Zeinaly, Mahshid	Master's (In Progress)	Supervised 2009 -	HMMer Alignment Visualization	SIAT Grad Student
Erfani, Minoo	Master's (In Progress)	Supervised 2008 -	Email Time Sequence Visualization	SIAT Grad Student
Yim, Ji-Dong	Doctoral (In Progress)	Supervised 2006 -	Cell Phone Robotics	SIAT Grad Student
(Name withheld)	Master's (In Progress)	Co-supervised 2006 -	Video Game Players Personality-based Preferences	SIAT Grad Student
Bojin, Nis	Doctoral (In Progress)	Supervised 2005 -	Epistemology of Play in Massively Multiplayer Online Games	SIAT Grad Student
(Name withheld)	Master's (Completed)	Co-supervised 2006 - 2009	Facial Animation Expert's Survey	Unknown
Amini, Pooya	Master's (In Progress)	Supervised 2008 - 2008	Free-Form Surface Design	SIAT Grad Student
(Name withheld)	Undergraduate (Completed)	Co-supervised 2008 - 2008	Email Traffic Visualization	UBC CS Grad School
(Name withheld)	Undergraduate (Completed)	Supervised 2008 - 2008	Primer Visualization	UBC Undergraduate
Barnes, Steven J	Master's (Not Completed)	Supervised 2006 - 2008	BrainFrame: A Knowledge Visualization System for Neurosci	Teaching at UBC Psychology Dept
(Name withheld)	Undergraduate (Completed)	Supervised 2007 - 2007	Strategy Game Development	Unkown
(Name withheld)	Undergraduate (Completed)	Supervised 2007 - 2007	Sequence Visualization	Unkown
Chih, Jason	Undergraduate (Completed)	Supervised 2006 - 2007	IMAS Spatial Index + Layout	Web Services Company, Vancouver
Sterk, Tristan	Doctoral (Not Completed)	Co-supervised 2006 - 2007	Free-Form Architecture	Architecture Practice
(Name withheld)	Master's (Completed)	Supervised 2005 - 2007	Optimal Defensive Player Positioning with Collaboration	Vancouver Software Firm
(Name withheld)	Master's (Completed)	Supervised 2005 - 2007	Gaming Framework for Modelling Competitive Service Industrs	Vancouver Software Firm
(Name withheld)	Undergraduate (Completed)	Supervised 2006 - 2006	IMAS Scene Graph Restructring	Unknown
Deng, Athena Qixia	Res. Associate (Completed)	Supervised 2005 - 2006	Bioinformatics: IMAS: Primer Design Integration	BC Genome Sciences Centre
(Name withheld)	Undergraduate (Completed)	Supervised 2005 - 2005	IMAS: TransTerm Integration	Emory School of Medicine

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Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
(Name withheld)	Undergraduate (Completed)	Supervised 2005 - 2005	IMAS: Gene relationship Vis	Unknown
(Name withheld)	Undergraduate (Completed)	Supervised 2005 - 2005	IMAS: GeneBank sequence integration	Electronic Arts, California
Zhang, Yinan	Res. Associate (Completed)	Supervised 2005 - 2005	IMAS: Code refactoring	SFU Computing Science MSc
(Name withheld)	Undergraduate (In Progress)	Supervised 2004 - 2005	IMAS: Primer design module	Unknown
Jang, Justin	Doctoral (In Progress)	Supervised 2004 - 2005	Level of Detail Polygonal Simplification	Ph.D. Student, Georgia Tech
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2005	IMAS: Hmmer integration	Unkown
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2005	IMAS: Multialignments + Metabolic system vis	Electronic Arts, California
(Name withheld)	Master's (Completed)	Supervised 2003 - 2005	3D Volume-Rendered Weather	Unkown
Llamas, Ignacio	Master's (Completed)	Supervised 2002 - 2005	Meshculptor: a two-handed 12-degree-of-freedom free-form...	Computer Scientist, nVidia, California
(Name withheld)	Master's (Completed)	Supervised 2001 - 2005	Mobile Situational Visualization + Fire Simulation	Computer Scientist, BNSF Corp
(Name withheld)	Undergraduate	Supervised 2004 - 2004	Mass Spectrometry Visualization	Unknown
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2004	Mass Spectrometry Visualization	Stottler Henke, California
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2004	Mass Spectrometry Visualization	Video Game Studio, Orlando
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2004	Simulation of Partial Blindness Virtual Environments	PhD Student, Brown U/ RISD
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2004	Bioinformatics: IMAS: Navigation techniques	Computer Scientist, Atlanta
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2004	Mass Spectrometry Visualization	Stottler Henke, California
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2004	IMAS: GenBank data model	Unknown
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2004	IMAS: Metabolic network visualization	CEO at Levia Software, Atlanta
(Name withheld)	Master's (Completed)	Co-supervised 2002 - 2004	A zoomable genomic visualization system work	Student, Ga Tech PhD Biomedical Engineering Program

## 1. Most Significant Contributions to Research/and or to Practical Applications

1. **Ignacio Llamas, Alexander Powell**, Jarek Rossignac, Christopher D. Shaw “Bender: A Virtual Ribbon for Deforming 3D Shapes in Biomedical and Styling Applications”, *Proceedings of the ACM Symposium on Solid and Physical Modeling 2005*, Cambridge, MA, pages 89-99.

These papers extend the Two-Handed 3D interface style I introduced in 1994, and continue the development of 3D interaction techniques that more fully exploit the manual skills of both users’ hands. According to Google Scholar, [1] has been cited net 13 times. The *MeshSculptor* editor that implements these operators is now being used by A. Yoganathan and K. Pekkan of the Georgia Tech Biomedical Engineering department to perform free-form design of scanned anatomical shapes for pediatric cardiac surgery planning.

2. David S. Ebert and Christopher D. Shaw “Minimally-immersive Flow Visualization”, *IEEE Transactions on Visualization and Computer Graphics*, 7(4):343-350, Oct-Dec 2001.

This work extends my Two-Handed 3D user interface work to the development of a highly-interactive 3D volume visualization system called *Stereoscopic Field Analyzer (SFA)*. *IEEE TVCG* is a top journal in the field of visualization, with an impact factor of 1.75, according to ISI. The SFA system has been used at NASA to visualize solar wind, and by Vaishnavi and Vandenberg at Georgia State to visualize semantic relationships among separate LDAP directory databases.

3. **Nazanin Kadivar, Victor Chen, Dustin Dunsmuir, Eric Lee, Cheryl Qian**, John Dill, Chris Shaw, Robert Woodbury “Capturing and Supporting the Analysis Process”, *Proc. IEEE Visual Analytics Science & Technology 2009*, Atlantic City, NJ, Oct 11-16, 2009, pp. 131-138.

This work introduces CZSaw, a new document linkage analysis system that provides an editable history navigation channel in addition to multiple visual representations of document collections and the entities within them. It is a platform for capturing the analysis process of document analysis.

4. Chris D. Shaw, Gregory A. Dasch, and Marina E. Ereemeeva, “IMAS: The Interactive Multigenomic Analysis System”, *IEEE Symposium on Visual Analytics Science and Technology 2007 (VAST)*, Sacramento, CA, Oct 30-Nov 1, 2007, pp 59-66.

This work, along with papers [7,20,21,24] represents my new focus on Bioinformatics Visualization. VAST is the premiere conference on Visual Analytics. The IMAS project led to discoveries about the relationship between the genomes of the *Rickettsia canadensis* and *Orientia tsutsugamushi* [7].

5. **Chris Shaw**, Mark Green, **J. Liang** and **Y. Sun**, “Decoupled Simulation in Virtual Reality with The MR Toolkit”, *ACM Transactions on Information Systems*, July 1993, 11(3):287-317.

With M. Green, I was the co-architect of the Minimal Reality (MR) Toolkit, VR software that was licensed by more than 600 research institutions worldwide from 1992-2001. The TOIS paper explains the Decoupled Simulation Model that the MR Toolkit uses, and has been cited 171 times according to Google Scholar. Its companion paper in CHI 1992 has been cited 92 times, and two follow-on papers on networked VR have been cited 70 times each. Some of the MR Toolkit documentation appears in edited form in Roy Kalawsky’s book *The Science of Virtual Reality and Virtual Environments*, Addison-Wesley, Wokingham, England, 1993.

## 2. Research Contributions and Practical Applications

### *Refereed Publications*

**Published Journal Papers (other than the 2 listed above)** (plus 6 more between 2002 and 1993)

6. **Andre Gagne**, Magy Seif El-Nasr, and Chris Shaw, “Analysis of Telemetry Data from a Real-Time Strategy Game: A Case Study”. *ACM Computers in Entertainment*, 10(3), Article 2, Oct 2012.
7. **Nis Bojin**, Chris D. Shaw, and Matt Toner, “Designing and Deploying a ‘Compact’ Crowdsourcing Infrastructure: A Case Study” *Business Information Review*, 28(1):41-48, March 2011. Sage Press.
8. Heekyoung Jung, Altieri Youngsuk, Jeffrey Bardzell, Juergen Scheible, James Pierce, Eric Paulos, Ji-Dong Yim, Christopher Shaw, “Demo Hour,” *ACM interactions*, 18(1):6-7, Jan 2011.
9. **Justin Jang**, Peter Wonka, William Ribarsky, and Christopher D. Shaw, “Punctuated Simplification of Man-Made Objects” *The Visual Computer*, 21(2):136-145, February, 2006.

10. Marina E. Ereemeeva, Anup Madan, Chris D. Shaw, Kevin Tang, and Gregory A. Dasch, "New Perspectives on Rickettsial Evolution from New Genome Sequences of *Rickettsia*, particularly *R. canadensis*, and *Orientia tsutsugamushi*", *Annals of the New York Academy of Sciences*, Vol 1063, pp 47-63 (2005).
11. Diane Gromala and Chris Shaw, "Expressing the Immeasurable: A Methodology for Developing a Visualization Tool for Patients Assessments of Pain", *Digital Creativity* 15(4) pp 253-256, 2004.

### **Other Refereed Contributions**

#### **Published Books/Book Chapters** (plus an additional 2 between 1991 and 2002)

12. Chris D. Shaw, Diane Gromala, and **Meehae Song**, "The Meditation Chamber: Towards Self-Modulation", to appear in *Meta-Plasticity in Virtual Worlds: Aesthetics and Semantics Concepts*, Edited by Dr. Gianluca Mura, Politecnico di Milano University, Italy, IGI Global, 2010, 15 pages.
13. Z. Wartell, **E. Houtgast**, **O. Pfeiffer**, C.D. Shaw, W. Ribarsky, and Frits Post, "Interaction Volume Management in a Multi-scale Virtual Environment", *Advances in Information & Intelligent Systems, SCI 251*, Z.W. Ras and W. Ribarsky Eds, Springer-Verlag, Berlin, 2009, pp. 327-349.

#### **One-Day Conference Tutorials** (3 between 1992 and 1991)

#### **Invited Keynote and Distinguished Lecture Addresses** (plus an additional 2 between 1995 and 2003)

14. Chris D Shaw, "Visual Analytics and Flow Cytometry Visualization using SFA", keynote at the 6<sup>th</sup> *Annual Rocky Mountain Bioinformatics Conference*, December 4-7, 2008

#### **Conference Presentations with Proceedings** (plus an additional 33 between 1989 and 2003)

15. **J-D Yim**, S. Chun, K. Jung, C.D. Shaw, "Development of Communication Model for Social Robots based on Mobile Service", *IEEE SocialCom 2010*, Minneapolis, MN, Aug 20-22, 2010, pp. 57-64.
16. **Minoo Erfani Joorabchi**, **Ji-Dong Yim**, Christopher D. Shaw, "EmailTime: Visualization of the Temporal Email", 2010 Grace Hopper Conference, Atlanta, GA, Sept 28-Oct 2, 2010, 6 pages.
17. **Minoo Erfani Joorabchi**, **Ji-Dong Yim** and Christopher D. Shaw, "EmailTime: Visual Analysis and Statistics for Temporal Email", *SPIE Visualization and Data Analysis 2011*, San Francisco, CA, Jan 23-27, 2011, *Proceedings of the SPIE*, Volume 7868, pp. 78680Q-78680Q-11.
18. S.J. Barnes, D. Gromala, **M. Song**, P. Squire, and C. Shaw. "Immersive Virtual Environments for the Management of Chronic vs. Acute Pain". Accepted for presentation at *Medicine Meets Virtual Reality 2011*, Newport Beach, CA, February 8-11, 2011, 8 pages.
19. **Ji-Dong Yim**, Chris D. Shaw, "Design Considerations of Expressive Bidirectional Telepresence Robots", *alt.chi 2011*, *ACM CHI Extended Abstracts on Human Factors in Computing Systems*, Vancouver, Canada, May 7-12, 2011, pp. 781-790.
20. **Meehae Song**, Diane Gromala, Chris Shaw, Steven J. Barnes, "The Interplays Among Technology & Content, Immersant & VE", *SPIE Engineering Reality of Virtual Reality 2010*, San Jose, CA, Jan. 21, 2009, Vol. 7525, pp. 75250B-75250B-9 (9 pages)
21. **Minoo Erfani Joorabchi**, **Arefe Dalvandi**, **Hasti Seifi**, Lyn Bartram, and Chris D. Shaw, "Visualizing Search Results: Evaluating an Iconic Visualization", *SPIE Visualization and Data Analysis 2010*, San Jose, CA, Jan. 18-19, 2009, Vol. 7530, pp. 75300G-75300G-10 (10 pages)
22. Diane Gromala, Chris Shaw and **Meehae Song**, "Chronic Pain and the Modulation of Self in Immersive Virtual Reality", *Biologically Inspired Cognitive Architectures II, AAAI Fall Symposium*, Washington, D.C. Nov 5-7, 2009, pg 71.
23. Bernhard E. Riecke, **Pooya Amini Behbahani**, and Chris D. Shaw, "Display Size does not Affect Egocentric Distance Perception of Naturalistic Stimuli", *ACM Symposium on Applied Perception in Graphics and Visualization 2009*, ACM, Chania, Crete, Greece, Sept 30-Oct 2, 2009, pp. 15-18.
24. **Ji-Dong Yim**, Chris D. Shaw, "Designing CALLY, a Cell Phone Robot", *Proceedings of CHI 2009 Design Practice Program*, April 5-9, 2009, 4 pages, ACM CHI.
25. **Ji-Dong Yim**, Christopher D. Shaw, "CALLY: The Cell Phone Robot with Affective Expressions", *HRI late-breaking abstracts*, 4<sup>th</sup> *ACM/IEEE International Conference on Human-Robot Interaction 2009*, San Diego, CA, March 11-13, 2009, pp 319-320.



26. **Steven J Barnes** and Chris D. Shaw, “BrainFrame: A Knowledge Visualization System for the Neurosciences”, *SPIE Visualization and Data Analysis 2009*, San Jose, CA, Jan. 19-20, 2009, pages 72430F.1 - 72430F.10 (10 pages)
27. **Ji-Dong Yim**, Chris D. Shaw, Lyn Bartram, “Musician Map: Visualizing Music Collaborations Over Time”, *SPIE Visualization and Data Analysis 2009*, San Jose, CA, Jan 19-20, 2009, pages 72430A.1 – 72430A.10 (11 pages).
28. Chris D. Shaw, “Visualizing Conserved Gene Location across Microbe Genomes”, *SPIE Visualization and Data Analysis 2009*, San Jose, CA, Jan 19-20, 2009, pp. 724306.1 – 724306.10 (10 pages).
29. Chris D. Shaw, “Genomic Spring-Syteny Visualization with IMAS”, *Proceedings of MediVis08, 5th International Conference on BioMedical Visualization*, IEEE London, England, July 9-11, 2008, pages 3-8.
30. Chris D. Shaw, Diane Gromala, **A. Fleming Seay**, “The Meditation Chamber: Enacting Autonomic Senses”, *Proceedings of ENACTIVE/07, the 4th International Conference on Enactive Interfaces*, Grenoble, France, Nov 19-22, 2007, pp 405-408.
31. **Steven J. Barnes, Meehae Song, K.J. Lee**, Diane Gromala, CD Shaw, “NeuroFloat: real-time state-sensitive brain spaces”, *ACM SIGGRAPH 2007 Posters, Article 146*, San Diego, CA, Aug 5-9, 2007
32. **Jin Hong, Dong Hyun Jeong**, Christopher D. Shaw, William Ribarsky, Mark Borodovsky, and C. Song. “GVis: A Scalable Visualization Framework for Genomic Data”, *EuroVis 2005: Eurographics - IEEE VGTC Symposium on Visualization*, Leeds, UK, Jun 1-3, 2005, pp 191-198.
- Conference Presentations without Proceedings** (plus 7 between 2002 and 1991)
33. **Victor Chen, Dustin Dunsmuir, Nazanin Kadivar, Eric Lee, Cheryl Qian**, John Dill, Chris Shaw, and R. Woodbury, “CZSaw: a VA tool to help analysts both do the analysis and understand the analysis process”, Poster at Visual Analytics Consortium Meeting, Aug 2009, Richland, WA.
34. CD Shaw, **JD Yim, WO Chao**, and J Dill, “Visual Analysis of Temporal Email with EmailTime”, Poster at the 13th Intl. Conf. on Information Visualisation, IEEE, Barcelona, 14-17 Jul 2009.
35. Margaret Dolinsky, Jackie Morie, Chris D Shaw, and Ruth West, “VR and Art: Hyp-er- Reality?”, Panel at IEEE Virtual Reality Conference 2009, Lafayette, LA, March 14-18, 2009.
36. Chris D. Shaw, “Genomic Visualization and Analysis with IMAS”, *Poster at 7th Annual International Symposium Systems Biology and Engineering*, Seattle, WA, April 20-21, 2008.
37. Chris D. Shaw, “IMAS for Genomic Visualization”, *Poster at Graphics Interface 2008*, Windsor, ON, May 28-30, 2008.
38. **Steven J. Barnes, Meehae Song**, Diane Gromala, Chris D. Shaw, “NeuroFloat: Real-time Exploration of Brain Spaces”. *Toward a Science of Consciousness 2008 Posters*, Tucson, Apr 7-11, 2008
39. Christopher D. Shaw, M. E. Ereemeeva, **H. H. Shah**, G. A. Dasch, “Development of an Interactive Multigenome Analysis System (IMAS) for Annotation of Bacterial Sequences”, *Poster American Society for Microbiology Biodefense Meeting 2005*, Baltimore, MD, March 20-23, 2005.
40. Diane Gromala, Ira Horowitz, Christopher Shaw, “Expressing the Immeasurable: A Methodology for Developing a Visualization Tool for Patients Assessments of Pain”, Position Statement for the *CHI 2004 Workshop on Exploring Experience Methods Across Disciplines*, Vienna, Austria, April 25, 2004, ACM SIGCHI.

### ***Non-refereed Contributions***

**Conference Presentations With Proceedings** (plus an additional 6 between 2003 and 1990)

**Edited Proceedings and Collections** (plus an additional 5 between 2002 and 1992)

41. *Proceedings of Graphics Interface 2008*, (Program Co-Chair), Windsor, ON, May 28-30, 2008.

**Technical Reports** (10 between 2004 and 1989)

### ***Contributions to Practical Applications of Knowledge***

**Software Products**

- SW1. Chris Shaw and Mark Green, *The MR Toolkit*. (Listed on page 1)
- SW2. Chris Shaw, *The TwoHand Toolkit*. Building on the MR Toolkit, this software system supports the development of Two-Handed user interfaces. It is currently under development, and is used by 4 research groups across North America.
- SW3. Chris Shaw and David Ebert, *The Stereoscopic Field Analyzer*, Built on MR Toolkit and TwoHand Toolkit, this visualization software system uses glyph-based rendering to display multi-dimensional scientific and information datasets. It is currently under development, and is used by 4 research groups across North America.
- SW4. Bill Ribarsky, Nick Faust, Zach Wartell and Chris Shaw, et al. *GT-VGIS - the Georgia Tech Virtual Geographical Information System*. This system visualizes worldwide terrain elevation and phototextured imagery, with buildings, vector lines, and continent-wide 3D Doppler radar weather. The weather system and its interaction techniques are built on MR Toolkit and TwoHand Toolkit. The US Department of Defense funded this work.
- SW5. Chris Shaw and Bill Ribarsky. *GVis*. This system visualizes large collections of small genomes using a zoomable interface.
- SW6. Chris Shaw. *IMAS - Integrated Multigenomic Analysis System*. This system integrates data management and analysis of whole-genome microbial datasets, greatly speeding up the process of creating a genomic annotation. This system is in use at the Center for Disease Control in The Rickettsial Diseases and Viral Zoonoses Branch, headed by Dr. Gregory Dasch in Atlanta. The IMAS project led to discoveries about the relationship between the genomes of the *Rickettsia canadensis* and *Orientia tsutsugamushi* [7].
- SW7. Ignacio Llamas and Chris Shaw. *MeshSculptor*. This system does free-form surface editing, and is used at the Georgia Tech Biomedical Engineering for surgical planning.
- SW8. **Jeff Guenther, Ankit Gupta, Dustin Dunsmuir, Victor Chen, Nazanin Kadivar, Eric Lee, Cheryl Qian**, John Dill, Chris Shaw, Rob Woodbury. *CzSaw Visual Analytics Platform*. This document linkage analysis system provides an editable and replayable history navigation channel in addition to multiple visual representations of document collections and the entities within them. It is a platform for capturing the analysis process of document analysis.
- SW9. Steven Barnes, Wes Schreiber, Chris Shaw, and Diane Gromala, GNOSIS Medical Testing and Diagnosis Training Program This system trains medical students how to order diagnostic tests.
- Software Demonstrations** (3 between 1994 and 1993)
- Consulting and Industrial Experience** (9 between 1987 and 1981)

### 3. Other Evidence of Impact and Contributions

**Invited Conference Session Chairmanships** (7 between 1995 and 1998)

**Invited Presentations** (24 between 1988 and 2005)

1. Chris D. Shaw, "Visual Analytics and Biological Sequence Data", SFU GRUVI Lab Invited Presentation, 6 March, 2008.
2. Chris D. Shaw, "Visual Analytics for Flow Cytometry", Brinkman Group Presentation, BC Cancer Research Center, 18 Nov, 2008

**Consultant Contributor for VR Art Works** (6 between 1994 and 2003)

**Press Interviews, Coverage** (plus an additional 6 between 1999 and 2003)

1. Two-page interview regarding *CS4455 - Video Game Design and Programming* appeared in the April 2004 issue of *Game Informer*.

**Membership and Activities in Professional Societies**

ACM SIGGRAPH, 1983-present; ACM SIGCHI, 1991-present; IEEE Computer Society, 1992-present

**Editorial Posts**

*IEEE Computer Graphics and Applications* – Guest Co-Editor – *Serious Games*, March/April 2009

*IEEE Transactions on Visualization and Computer Graphics* – Associate Editor, 2003 - 2007.

**Conference Committee Activities** (plus an additional 41 between 2005 and 1989)

1. Program Co-Chair, Graphics Interface 2008, Windsor, ON, May 28-30, 2008
2. Program Committee, Graphics Interface 2007, Montreal, May 27-30, 2007
3. Program Committee, SPIE Visualization and Data Analysis 2007, San Jose, California, January 2007
4. Program Committee, Graphics Interface 2006, Quebec City, June 7-9, 2006
5. Program Committee, SPIE Visualization and Data Analysis 2006, San Jose, California, January 2006
6. Program Committee, IEEE Visualization 2005, Minneapolis, MN, Oct 23-28, 2005.
7. Program Committee, IEEE Virtual Reality 2004, Chicago, IL, Mar 27-31, 2004.
8. Program Committee, IEEE Virtual Reality 2003, Los Angeles, CA, Mar 22-26, 2003.

**On-Campus Committees** (15 between 2005 and 1996)

**Editorial and Reviewer Work for Technical Journals**

ACM Trans. Graphics; ACM Trans. Computer Human Interaction; ACM Trans. Info Systems; IEEE Computer; IEEE Trans. Computers; ACM Computing Surveys; ACM Multimedia Systems; Presence; Computer Graphics Forum; Intl Journal of Human-Computer Studies, Journal of Virtual Reality and Broadcasting, Human Molecular Genetics

**Professional Conference Refereeing**

CHI '93-2006, 08; SIGGRAPH 94-05,07; SIGGRAPH 3D Symposium 99, 01; EuroGraphics 08, Graphics Interface 99, 06-09; VRST 96; VRST/ICAT 95; UIST 92 98,07; IEEE Visualization 96-04,06,08, IEEE InfoVis 07, IEEE VAST 07-08, IEEE/Eurographics EuroVis 08, IEEE IV 09, IEEE 3D User Interfaces 08.

**Program Reviewer**

External evaluator for curriculum development involving new technologies; Bell Habitat at the Canadian Film Centre, 2001, Special Session on Interactive Entertainment; Massachusetts Institute of Technology, 2004 National Science Foundation, IGERT (interdisciplinary graduate program grants), 2004.

**4. Delays in Research Activity**

Nil

**5. Contribution to the Training of Highly Qualified Personnel (HQP)**

With John Dill and Rob Woodbury, I am working with students Jeff Guenther, Ankit Gupta, Victor Chen, Dustin Dunsmuir, Nazanin Kadivar, Eric Lee and Cheryl Qian on *CzSaw*, (SW8), which is a new document linkage analysis system that enables analysts to capture, replay, and re-evaluate their analysis steps. I serve on the supervisory committees of Kadivar and Dunsmuir, and supervise Alimadadi. Paper [3] and poster [25] are about this work.

Papers [18, 23, and 30] grew out of two projects I developed with Master's student Steven J. Barnes on the topics of NeuroInformatics. Barnes has a Ph.D. in Neuroscience, and joined my research group at SIAT to extend his disciplinary focus to Computer Science and Interaction Design. Paper [18] is the result of our initial work on developing a visualizable ontology for the Neurosciences.

Papers [16, 17, 19, and 26] grew out of two projects I developed with doctoral student Ji-Dong Yim, who was trained as an industrial Designer and is now extending his disciplinary focus to Computer Science. His PhD. Dissertation topic is focusing on a new platform for mobile computing that combines a cell phone with a mobile robot, suitable for enhanced teleconferencing and telepresence.