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: 2013/06/16

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Singh	Karan	K	253669

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

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

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

APPOINTMENT AT A POSTSECONDARY INSTITUTION

Title of position: Professor

Department: Computer Science (St. George Campus)

Campus:

Canadian postsecondary institution:

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

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

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

ACADEMIC BACKGROUND

Degree	Name of discipline	Institution	Country	Date yyyy/mm
Bachelor's	Computer Science and Engineering	India	INDIA	1991 / 07
Master's	Computer and Information Science	The Ohio State University	UNITED STATES	1992 / 12
Doctorate	Computer and Information Science	The Ohio State University	UNITED STATES	1995 / 11

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	9	1	11
Master's	2	1	11	3	17
Doctoral	2		3	1	6
Postdoctoral		1	4	1	6
Others					
Total	4	3	27	6	40

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

PROTECTED WHEN COMPLETED

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)
Professor	Toronto	Computer Science (St. George Campus)	2002/01
Chief Scientist	Geometry Systems Inc.		2002/01 to 2010/05
Technical Lead R+D	Paraform Inc.		1999/06 to 2001/09
Consultant	Disney, Weta FX	Character modeling, setup and animation	1998/06 to 2001/12
Graphics Researcher	Alias|Wavefront, Toronto ON		1995/12 to 1999/06
Invited Researcher	Advanced Telecommunications Research, Kyoto, Japan	Communication Systems Research Lab	1994/01 to 1994/12
Research Associate	Ohio State University	Adv. computing center for arts & design	1992/09 to 1993/12

Personal identification no. (PIN)	Family name
253669	Singh

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			
Lionel Reveret	Intuitive interfaces for Modeling and Animation of Graphical Environments France-Canada research Foundation Collaborative program 5 hours/month	12,658 (25%)	2005
Karan Singh	Art and anatomy based techniques for interactive character modeling and animation NSERC Operating 10 hours/month	30,000 30,000 30,000 30,000 30,000	2006 2007 2008 2009 2010
b) Support currently held			
Ravin Balakrishnan	Next generation user interfaces for data visualization NSERC Strategic Grant 5 hours/month	82,900 (25%) 89,400 (25%) 91,500 (25%)	2004 2005 2006
Karan Singh	Mathematical Surface Representations for Conceptual Design MITACS 25 hours/month	120,000 (25%) 120,000 (25%) 120,000 (25%) 120,000 (25%) 120,000 (25%)	2006 2007 2008 2009 2010

Personal identification no. (PIN)	Family name
253669	Singh

RESEARCH SUPPORT

Family name and initial(s) of applicant	Title of proposal, funding source and program, and time commitment (hours/month)	Amount per year	Years of tenure (yyyy)
List all sources of support **(including NSERC grants and university start-up funds)** held as an applicant or a co-applicant: a) support held in the past four (4) years but now completed; b) support currently held, and c) support applied for. For group grants, indicate the percentage of the funding directly applicable to your research. Use additional pages as required.			
b) Support currently held			
Karan Singh	Interactive interfaces for the visualization and exploration of anatomic structures Ontario Reasearch Foundation Early Researcher Award 15 hours/month	20,000 20,000 20,000 20,000 20,000	2007 2008 2009 2010 2011
Karan Singh	projects MOTION, AESTHVIS, SKETCH GRAND network investigator 20 hours/month	55,000(100%)	2010
Karan Singh	Sculpt and sketch interfaces for 3D modeling NSERC Operating 10 hours/month	33,000 33,000 33,000 33,000	2011 2012 2013 2014

PROTECTED WHEN COMPLETED

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
253669	Singh

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
(Name withheld)	Doctoral (In Progress)	Supervised 2007 -	Biomechanically Inspired Motion Editing.	current student
(Name withheld)	Doctoral (In Progress)	Supervised 2006 -	Expressive Character Animation using Motion Extrema	Pixar
(Name withheld)	Doctoral (In Progress)	Supervised 2005 -	Parameteric anatomic modeling	current student
(Name withheld)	Master's (Completed)	Supervised 2009 - 2011	Stroke dyanmics & inertia for the realtime sketch neatening	Independently employed
(Name withheld)	Postdoctoral (Completed)	Supervised 2009 - 2010	Production Drawing.	INRIA
(Name withheld)	Doctoral (Completed)	Co-supervised 2006 - 2010	Machine Learning algorithms for geometry proc. by example.	PDF Stanford university
(Name withheld)	Doctoral (Completed)	Supervised 2006 - 2010	Part-based representation and editing of 3D surface models.	PDF UC Berkeley
(Name withheld)	Master's (Completed)	Co-supervised 2008 - 2009	Watercolor Rendering	Independently employed
(Name withheld)	Master's (Completed)	Supervised 2008 - 2009	Sketch based Path Design	current student
(Name withheld)	Master's (Completed)	Co-supervised 2008 - 2009	Robust Physics-Based Locomotion Using Low-Dim Planning	PhD student U of Washington
(Name withheld)	Postdoctoral (Completed)	Co-supervised 2007 - 2009	Sketching based conceptual modeling.	Asst. Prof. KAIST
(Name withheld)	Doctoral (Completed)	Supervised 2004 - 2009	Geometric feature detection and processing	Autodesk Research
(Name withheld)	Postdoctoral (Completed)	Supervised 2005 - 2006	Sketch based animation simulation	Pixar
(Name withheld)	Master's (Completed)	Supervised 2005 - 2006	Interfaces for animation direction	current student
(Name withheld)	Master's (Completed)	Supervised 2005 - 2006	A robust statistical approach for curvature estimation.	PDF Stanford university
(Name withheld)	Undergraduate (Completed)	Supervised 2004 - 2005	3D anatomic muscle reconstruction	undergraduate student
(Name withheld)	Master's (Completed)	Supervised 2004 - 2005	Computer puppetry on 3D volumetric displays	Autodesk
(Name withheld)	Master's (Completed)	Co-supervised 2004 - 2005	An Interface for Virtual 3D Sculpting via Physical Proxy	Google
(Name withheld)	Master's (Completed)	Co-supervised 2004 - 2005	Sketching 2D animation	ATI
(Name withheld)	Master's (Completed)	Supervised 2003 - 2005	Interactive Nonlinear Projection of 3D scenes	Pixar / current student

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
253669	Singh

Name	Type of HQP Training and Status	Years Supervised or Co-supervised	Title of Project or Thesis	Present Position
(Name withheld)	Master's (Completed)	Supervised 2003 - 2005	Anatomical Inverse Dynamics for unconstrained hand motion	Silicon Knights
(Name withheld)	Master's (Completed)	Supervised 2003 - 2004	Layered Dynamic Control for Interactive Character Swimming	Engineer, Electronic Arts, Vancouver
(Name withheld)	Master's (Completed)	Supervised 2003 - 2004	Editing digital models using physical materials.	Engineer, AUG Signals
(Name withheld)	Master's (Completed)	Supervised 2002 - 2003	Handrix: Animating the human hand.	Engineer, Side FX Inc.
(Name withheld)	Postdoctoral (Completed)	Co-supervised 2002 - 2003	Data Capture of human hand motion	Asst. Prof. St. Marys.
(Name withheld)	Master's (Completed)	Supervised 2000 - 2001	Character setup for production pipelines.	Character superviser, Tippett Studios

Research Contributions- Karan Singh

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

The contributions listed below enumerate cohesively large projects and software systems that are in extensive public use and described in their referenced publications.

Geometric Modeling:

- *Mathematical Surface Representations for Conceptual Design*: founded and lead MITACS full project from 2003-2012 that produced 120 peer-reviewed publications, graduated over 40 HQP and won 6 MITACS annual awards.
- *MeshMixer*: a system for rapid 3D model composition and sculpting **[SS 10]**. http://www.meshmixer.com
- *ILoveSketch*: a 3D sketching system for conceptual design **[BBS08][BBS 09]** featured on slashdot, design forums (design sojourn, drawn). http://www.ilovesketch.com
- *Shapeshop 3D* a system for free-form modeling of organic 3D shapes **[S+07][SS08][SSB08]** http://www.shapeshop3d.com.
- *Paraform 1.0* Technical lead on reverse engineering technology that was the premier industrial solution for processing unstructured 3D scan data **[SPK 04]**.

Animation:

- *Ryan*: nonlinear projection of 3D scenes developed for Oscar winning animated short film Ryan. **[CS 04]**.
- *Maya 1.0, 1998, Maya 2.0, 2000.* R+D work on character and facial animation tools, now the de facto standard for modeling and animation. **[SF 98][SK 00]**.

2. Research Contributions and Practical Applications

Publications (last 5 years)

*Refereed Journal and Conference Publications **2007-present**.*

- [W+13] *Mirror image arm used in monocular, binocular, and blindfolded pointing*, M. Wnuczko, J. Kennedy, M. Niemeier, **K. Singh.** *Psychonomic Bulletin & Review, February 2013, Volume 20, Issue 1, pp 95-100*. (journal impact factor 2.61).
- [S+13] *Direct Space-Time Trajectory Control for Visual Media Editing.* S. Santosa, F. Chevalier, R. Balakrishnan and **K. Singh**. in *Proceedings of the SIGCHI conference on Human Factors* (**CHI '13**). 10 pages. 2013. **Best Paper Honorable Mention.**
- [S+13ii] *Sculpting multi-dimensional nested structures*. L. Stanculescu, R. Chaine, M.P. Cani, **K. Singh**. 10 pages (to appear) *Shape Modeling International 2013.*
- [LS12] *Finger Walking: Motion Editing with Contact-Based Hand Performance.* N. Lockwood, **K. Singh**. *SCA '12: Proceedings of the 2012 ACM SIGGRAPH/Eurographics Symposium on Computer Animation* (10 pages).
- [R+12] *Inverse Kinodynamics: Editing and Constraining Kinematic Approximations of Dynamic Motion.* C. Rahgoshay, A. Rabbani, **K. Singh**, P. Kry. *Graphics Interface 2012*, (**Best Paper Award**).
- [DS12] *Concepture: A Framework for Recognizing Gestures with Repetitive Patterns.* N. Donmez, **K. Singh**. Eurographics *Sketch Based Interfaces and Modeling, SBIM 2012.* (**Best Paper Award**).
- [ZWS12] *Snout: One Handed use of Capacitive Touch Devices,* A. Zarek, D.

Wigdor, **K. Singh** 2012. Snout: One Handed use of Capacitive Touch Devices. International Working Conference on Advanced Visual Interfaces. *AVI 2012.*

- [B+12] *Design-Driven Quadrangulation of Closed 3D Curves,* M. Bessmeltsev, C. Wang, A. Sheffer, **K. Singh** *ACM Transactions on Graphics (Proc. SIGGRAPH ASIA 2012), Volume 31, Issue 5, December 2012.*(11 pages).
- [S+12] *CrossShade: Shading Concept Sketches Using Cross-Section Curves.* C. Shao, A. Bousseau, A. Sheffer, **K. Singh**. *ACM Transactions on Graphics (Proc. SIGGRAPH ASIA 2012)*ACM SIGGRAPH 2012 (11 pages).
- [**MSM11**] *Slices: A Shape-proxy Based on Planar Sections.* J. McCrae, **K. Singh**, N. Mitra. ACM Transactions on Graphics, SIGGRAPH Asia, 2011 (11 pages).
- [**T+11**] *GeoBrush: Interactive Mesh Geometry Cloning*. K. Takayama, R. Schmidt, **K. Singh**, T. Igarashi, T. Boubekeur, O. Sorkine. Computer Graphics Forum, 30(2) (Eurographics 2011), pp. 613-622. (10 pages).
- [LS11] *Biomechanically-Inspired Motion Path Editing.* N. Lockwood, **K. Singh**. ACM SIGGRAPH SCA '11. (10 pages).
- [MS11] *Neatening sketched strokes using piecewise French Curves.* J. McCrae, **K. Singh**. ACM/EG SBIM Sketch-Based Interfaces and Modeling, 2011. (8 pages).
- [TSB 11] Elasticurves: exploiting stroke dyanmics and inertia for the real-time neatening of sketches. Y. Thiel, **K. Singh**, R. Balakrishnan. ACM UIST 2011.
- [B+11] High-Precision Surface Reconstruction of Human Bones from Point-Sampled Data. J. Bibliowicz, A. Khan, A. Agur, **K. Singh**. International Summit on Human Simulation (ISHS) 2011.
- [K+11] Dots, line, contour & surface edge trigger centre-surround pickup mechanism. J. Kennedy, M. Wnuczko, M. Santos, P. Coppin & **K. Singh**. International Conference of perception and action ICPA 2011.
- [SS 10] R. Schmidt, **K. Singh.** *meshmixer: an interface for rapid mesh composition.* ACM SIGGRAPH 2010 talks.
- [R+10] K. Ravichandiran, M. Ravichandiran, M. Oliver, **K. Singh**, A. Agur, N. McKee. *Fiber bundle element method of determining physiological cross sectional area from three-dimensional computer muscle models created from digitized fiber bundle data.* Computer Methods in Biomechanics and Biomedical Engineering 2010.
- [M+10] J. McCrae, M. Glueck, T. Grossman, A. Khan, **K. Singh**. *Exploring the Design Space of Multiscale 3D Orientation.* Advanced Visual Interafaces 2010.
- [KHS10] E. Kalogerakis, A. Hertzmann, **K. Singh**. *Learning 3D Mesh Segmentation and Labeling*. accepted in the ACM Transactions on Graphics, Vol. 29, No. 3, July 2010 (SIGGRAPH 2010).
- [S+09i] R. Schmidt, A. Khan, **K. Singh**, G. Kurtenbach. *Analytic drawing of 3D scaffolds* (ACM SIGGRAPH Asia 2009).
- [K+09i] E. Kalogerakis, P. Simari, D. Nowrouzezahrai, **K. Singh**. *Extracting lines of curvature from noisy point clouds.* Computer-Aided Design journal 2009, Volume 41, Number 4 (April 2009), pp. 282-292 (10 pages).
- [MS 09] J. McCrae, **K. Singh**. *Sketching path layouts.* Graphics Interface 2009.
- [S+09ii] P. Simari, E. Kalogerakis, D. Nowrouzezahrai, **K. Singh**. *Multi-objective shape segmentation and labeling.* (SGP Symp. Of Geometry Processing 2009).

- [S+09iii] R. Schmidt, A. Khan, G. Kurtenbach, **K. Singh**. *On Expert Performance in 3D Curve-Drawing Tasks* (ACM/Eurographics SBIM Sketch based interfaces and modeling 2009). (**Best paper Award**).
- [BBS09] S. Bae, R. Balakrishnan, **K. Singh**. *Everybody LovesSketch:3D sketching for a broader audience* (ACM UIST 2009).
- [R+09] K. Ravichandiran, M. Ravichandiran, M. Oliver, **K. Singh**, A. Agur, N. McKee. *Determining physiological cross-sectional area of extensor carpi radialis longus and brevis as a whole and by regions using 3D computer muscle models created from digitized fiber bundle data.* Methods and Programs in Biomed., 2009.
- [K+09ii] E. Kalogerakis, P. Simari, D. Nowrouzezahrai, J. McCrae, A. Hertzmann, **K. Singh**. *Real time line drawing for animated surfaces.* (14 pages) ACM SIGGRAPH Transactions on Graphics Volume 28, Issue 1, January 2009.
- [GSS 09] C. Grimm, N. Sudarsanam, and K. Singh *CubeCam: A Screen-Space Camera Manipulation Tool*, Computational Aesthetics 2009**.**
- [BBS08] S. Bae, R. Balakrishnan, **K. Singh**. ILoveSketch: *As natural as possible curve sketching for creation of 3D models.* (ACM UIST 2008).
- [C+08] P. Coleman, J. Bibliowicz, **K. Singh**, M. Gleicher. *Staggered Poses: A Character Motion Representation for Detail-Preserving Editing of Pose and Coordinated Timing.* Symposium on Computer Animation 2008.
- [MS08] J. McCrae, **K. Singh**. *Sketching piecewise clothoid splines.* (8 pages) Eurographics, Sketch based interfaces and modeling SBIM 2008 (**Best Paper**).
- [SGS08] N. Sudarsanam, C. Grimm, **K. Singh**. *Non-linear perspective widgets for creating multiple-view images* (8 pages) (ACM NPAR 2008).
- [D+08] P. Dragicevic, G. Ramos, J. Bibliowicz, D. Nowrouzezahrai, R. Balakrishnan, **K. Singh**. *Video browsing by direct manipulation*, ACM SIGCHI CHI 2008.
- [SSB08] R. Schmidt, **K. Singh**, R. Balakrishnan. *Sketching and Composing Widgets for 3D Manipulation***.** Proceedings of Eurographics 2008 / Computer Graphics Forum.
- [SS08] R. Schmidt, **K. Singh**. *Sketch-Based Procedural Surface Modeling and Compositing with Surface Trees.* Proceedings of Eurographics 2008 / Computer Graphics Forum (10 pages).
- [AS07] A. Angelidis, **K. Singh**. *Kinodynamic skinning using volume-preserving deformations.* (ACM SIGGRAPH SCA Symposium of computer animation 2007, (12 pages). **Best Paper Award**.
- [S+07] R. Schmidt, T. Isenberg, P. Jepp, **K. Singh**, B. Wyvill. *Sketching, scaffolding and inking:a visual history for interactive 3d modeling.*(ACM NPAR 2007).
- [K+07] E. Kalogerakis, P. Simari, D. Nowrouzezahrai, **K. Singh**. *Robust statistical estimation of curvature on discretized surfaces.* Eurographics/ACM Siggraph Symposium on Geometry Processing (SGP '07), pp. 13-22. (10 pages).
- [N+07] D. Nowrouzezahrai, P. Simari, E. Kalogerakis, **K. Singh**, E. Fiume. *Compact and Efficient Generation of Radiance Transfer for Dynamically Articulated Characters*, Proceedings of the ACM Graphite 2007**.** (8 pages).
- [W+07] F. Wu, V. Ng-Thow-Hing, **K. Singh**, A. Agur, N. McKee. *Computational representation of the aponeuroses as NURBS surfaces in 3D musculoskeletal models.* Computer Methods and Programs in Biomedicine 88(2): 112-122 (2007) (10 pages).

Invited Lectures and Colloquia

***Keynotes, Colloquia and distinguished lectures* = 15*, Other invited lectures* = 34.**

Only Keynotes and Distinguished Lectures Listed

- SOCS Colloquium McGill University Oct 2012: Art and Perception driven Interactive Modeling.
- Keynote: *Sketching: perception, interaction and modeling.* Eurographics Symposium of Geometry Processing SGP July 2010, Lyon.
- *Sketch and sculpt: perception, interaction and modeling*. Computer Science keynote Lecture *APICS Mathematics, Statistics and Computer Science Conference,* St. Mary's University, Oct. 2010.
- Keynote: *Sketching: perception, interaction and modeling*: Colloquium, March 18, 2010 School of Technology & Design, NYC College of Technology.
- Keynote: *Straight ahead vs. pose to pose animation* China International cartoon and animation festival (Hangzhou, May 2007).
- *Labyrinths & Mazes*. Ross Mathmatics Program, Ohio State University, 50th anniversary distinguished lecture (July 2007).
- *Anatomy and animation,* Tufts University, Colloquium, April 2006.
- *Anatomy: Art or Science.* Ontario Science Center, public lecture series in connection with Bodyworlds exhibit Dec. 2005.
- *Artist driven interactive graphics (the science of Ryan)*

  UT Austin March 2004, Microsoft Research Asia April 2004, Beijing Film Academy, April 2004, INRIA Grenoble May 2004, Gobelins Animation School Paris June 2004, McGill University Sept. 2004, Washington Univ. at St. Louis Nov. 2004, Rutgers Dec. 2004, UBC, Electronic Arts Vancouver Dec. 2004, Microsoft Research Seattle Jan. 2005, University of Calgary Feb.2005, Northeastern University Jan 2006.

Patents

- Interactive labyrinth curve generation and applications (US pat. no. 7928983).
- System method and computer program for 3D sketching with dynamic partial image recognition and comparable image retrieval. (U.S. patent# 062108-0007).
- A system for creating and modifying curves and surfaces (U.S. pat. no. 7289121).
- Method and app. for geometric model deformation using wires U.S. pat. 6,204,860.
- Motion synthesis equipment using 3D models. Tokuganhei 7-42120 (Jap. Pat# 1995-42120).
- 3D image synthesis equipment for enabling wrinkle formation. Tokuganhei 7-105012 (Jap. Patent# 1995 - 105012).

Animations and Art Exhibitions

- Bingo *(Technical Director)* 1998.
- Ryan *(Software R+D Director)* 2004.
- Amazing *(Director)* 2005 (Eurographics Animation Festival).
- The Spine (*software tools and NPR rendering*) 2009.
- Labyrinths (19-21 nov. 2010, AF Galerie Romain Roland, Delhi).
- A figure runs though it (Group exhibition, Blue Moon Café, Toronto, July 2011).
- The Big Art Show (Group exhibition, Twist Gallery, Toronto, Oct. 2012).

3. Contributions to the Training of Highly Qualified Personnel

Career Student Numbers **PDF=6, PhD=4, MSc=17**

Graduate Students Supervision (current)

Student	Degree	Start date	Email
Chris de Paoli	MSc	Fall 2011	chrisdepaoli@gmail.com
Seacy Zhen	MSc	Fall 2011	seacy@ dgp.toronto.edu
Fanny Chevalier	PDF	Winter 2011	fanny@dgp.toronto.edu
Qiuying Xu	MSc	Fall 2010	qiuying@dgp.toronto.edu
Noah Lockwood	PhD	Summer 2006	lockwood@dgp.toronto.edu
James McCrae	PhD	Fall 2008	mccrae@dgp.toronto.edu

4. Other Evidence of Impact and Contributions

Honours

- **MITACS** 2008-2009 Mentorship Award of Excellence.
- **Indo-Canada Chamber of Commerce** (Technology Award), 2008.
- **International Distinguished Scholar** (University of Pennsylvania), 2007.
- **Centennial Foundation** (Excellence Award, Toronto), 2006.
- **ICES Visiting Professor award** (University of Texas, Austin) 2005.
- **Ryan.** (Software R+D Director) Cannes 2004, Kodak Discovery Award, Young Critic's Prize, Canal+ Best Short Film. SIGGRAPH 2004 Electronic Theater, Jury Prize. Annecey IFF 2004, Jury Award. Prix Arts Electronica 2004, Golden Nica. Ottawa anim, fest., Grand Prize. **Oscar (Best Animated Short) 2005.** Genie 2005.
- **Paraform 1.0, 2000.** R+D work on first commercial reverse engineering technology (**Technical achievement Academy Award 2001**).
- **Maya 1.0, 1998. (Technical Oscar 2003,** only 38 such awards since 1930**).**
- **Bingo.** (Technical Director) SIGGRAPH 1998,ET, Grand Finale, Genie 1998.

Professional Activities (past 5 years 2008-present)

- SIGGRAPH Art Papers Advisory Board, 2013.
- SIGGRAPH, SIGGRAPH Asia Technical Papers committee, 2012, 2013.
- Program Committee 2013: SMI (Shape Modeling International), SGP (Symposium of Geometry Processing), SCA (Symposium of Computer Animation)
- Program Committee 2012: Eurographics, SMI (Shape Modeling International), SGP (Symposium of Geometry Processing), SCA (Symp. of Computer Animation)
- Program Chair: Eurographics Sketch-based Interfaces and modelling SBIM 2012.
- SIGGRAPH Art Papers Jury, 2011.
- Conference Chair: Eurographics Sketch-based Interfaces and modelling, June 2008.
- Frequent Program Committee Member for various conferences (since 2003):
  Eurographics, SIGGRAPH, SCA (Symposium of Computer Animation), SGP (Symposium on Geometry Processing), NPAR (Non-photorealistic Animation and Rendering), SBIM (Sketch based interfaces and modeling), Graphics Interface, IEEE VRST (Virtual Reality Software Technology).
- Managed the Dynamic Graphics Project (DGP) lab, University of Toronto, http://www.dgp.toronto.edu. (2007-2010).

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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: 2013/06/16

Family name	Given name	Initial(s) of all given names	Personal identification no. (PIN)
Singh	Karan	K	253669

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

Dept. of Computer Science
40 St. George St.
Toronto ON M5S2E4
CANADA

If address is temporary, indicate:

Starting date

Leaving date

Telephone number	Facsimile number	E-mail address
(416) 978-7201		karan@cs.toronto.edu

Telephone number (alternate)

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 [ ]	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).

Character modeling and animation, Curve and surface design, Design for manufacturability, Geometric deformations, Implicit functions, Mesh based representation, Multiresolution modeling, Reverse engineering, Virtual Reality systems

Research subject code(s)

Primary: 2707

Secondary: 2716

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 Singh, Karan K

Department	Postsecondary Institution
Computer Science (St. George Campus)	Toronto

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.