

**Faisal Z. Qureshi, Ph.D., University of Toronto, Department of Computer Science**

---

CONTACT INFORMATION	UOIT, Rm. UA4000 2000 Simcoe St. N. Oshawa, ON L1H 7K4, Canada	<i>Voice:</i> (416) 272-3274 <i>Fax:</i> (416) 369-6140 <i>E-mail:</i> faisal.qureshi@utoronto.ca <i>Web:</i> <a href="http://www.cs.toronto.edu/~faisal">http://www.cs.toronto.edu/~faisal</a>
CITIZENSHIP	Canada	
RESEARCH INTERESTS	Computer graphics, computer vision, sensor networks, robotics and AI; Behavior-based computer animation, autonomous characters for computer animation and games, autonomous agent architectures, cognitive vision, visual surveillance.	
EDUCATION	<p><b>University of Toronto</b>, Toronto, Ontario, Canada</p> <p>Ph.D., Computer Science, January, 2007.</p> <ul style="list-style-type: none"> <li>• Thesis Title: “Intelligent Perception in Virtual Sensor Networks and Space Robotics”</li> <li>• Thesis Advisor: Prof. Demetri Terzopoulos (Adjunct Prof., UofT, and Chancellor’s Professor of Computer Science, University of California, Los Angeles, CA, USA).</li> <li>• Thesis Committee: Prof. Sven Dickinson, Prof. Allan Jepson, and Prof. Hector Levesque.</li> </ul> <p>M.Sc., Computer Science, January, 2000.</p> <ul style="list-style-type: none"> <li>• Thesis Title: “Constructing Anatomically Accurate Face Models using Computed Tomography and Cyberware Data.”</li> <li>• Thesis Advisor: Prof. Demetri Terzopoulos.</li> </ul> <p><b>Quaid-e-Azam University</b>, Islamabad, Punjab, Pakistan</p> <p>M.Sc., Electronics, January, 1995.</p> <ul style="list-style-type: none"> <li>• Thesis Topic: “TACS: A Tone Actuated Computer Control System.”</li> <li>• Thesis Advisor: Prof. Ijaz M. Qureshi (Associate Dean, Mohammad Ali Jinnah University, Islamabad, Punjab, Pakistan).</li> </ul> <p><b>Punjab University</b>, Lahore, Punjab, Pakistan</p> <p>B.Sc., Mathematics with minor in Physics, June, 1992.</p>	
HONORS AND AWARDS	<p>Best paper in the <i>ACM Workshop on Video Surveillance and Sensor Networks</i>, 2005.</p> <p>Connaught Scholarship, University of Toronto, 2001 (1 Year).</p> <p>Commonwealth Scholarship, 1997 (2 Years).</p> <p>Distinction Post-Graduate Diploma, 1996, Computer Training Center, Islamabad, Pakistan.</p> <p>President’s Gold Medal, 1995, Quaid-e-Azam University, Islamabad, Pakistan.</p> <p>First Position, 1995, Dept. of Electronics, Quaid-e-Azam University, Islamabad, Pakistan.</p> <p>Pakistan Government Servants’ Benevolent Fund Scholarship, 1991 (4 Years).</p>	
RESEARCH GRANTS	<ol style="list-style-type: none"> <li>1. May 2009–Aug 2009, “Simulating Reality for Camera Networks Research,” 4-month Grant (\$7,000), Shared Hierarchical Academic Research Computing Network Undergraduate Student Fellowship Award.</li> </ol>	

2. Dec 2008–Aug 2009, “Handling Occlusions in Visual Monitoring Systems,” 6-month Grant (\$37,500), with K. El-Khatib (Co-PI), Ontario Centres of Excellence, Centre of Communications and Information Technologies.

## MEMBERSHIPS

Member, The Institute of Electrical and Electronics Engineers (IEEE) ([www.ieee.org](http://www.ieee.org))  
 Member, Association for Computing Machinery (ACM) ([www.acm.org](http://www.acm.org))

PROFESSIONAL  
EXPERIENCE

**University of Ontario Institute of Technology (UOIT)**, Oshawa, Ontario, Canada  
*Assistant Professor* **July 2008 – present**  
 Research, teaching, and student supervision.

**Autodesk Canada Co.**, Toronto, Ontario, Canada  
*Software Developer* **April, 2007 – June, 2008**  
 Member of the Autodesk AliasStudio modeling team. Autodesk AliasStudio is a leading industrial design system.

**University of Toronto**, Toronto, Ontario, Canada  
*Graduate Student* **August, 1997 – Jan 2007**  
 Ph.D. and M.Sc. research, coursework, and consulting projects.

**MDRobotics, Ltd.**, Brampton, Ontario, Canada  
*Contract Engineer* **January, 2001 – April, 2002**  
 Developed a vision-based autonomous satellite rendezvous and docking controller, which supported Boeing’s successful bid for DARPA’s \$12M Orbital Express project. The work led to a new autonomous agent control architecture named “CoCo”, which is suitable for intelligent vision-based robotic agents.

**AT&T Research Labs**, Red Bank, New Jersey, USA  
*Computer Graphics Intern* **May, 2000 – September, 2000**  
 Worked with Dr. J. Osterman (currently Prof. Dr.-Ing., Institut für Informationsverarbeitung, Universität Hannover, Hannover, Germany), director of AT&T’s Image Processing and Technology Research Group, on an Internet Chat prototype in which participants were represented by expressive graphical faces capable of synthesizing speech from text.

**Advanced Telecommunications Research Institute International**, Kyoto, Japan  
*Computer Graphics Intern* **Jun, 1999 – August, 1999**  
 Worked in ATR’s Media Integration & Communications Research Laboratories with Dr. J. Ohya (currently Professor of GITI, Waseda University, Saitama, Japan). Developed an algorithm for estimating facial soft-tissue thickness from computer tomography data.

**Informatics Complex (Robotics Division)**, Islamabad, Punjab, Pakistan  
*Scientific Officer* **June, 1996 – February, 1997**  
 Member of the Robotics Group. Developed a virtual 3D graphical environment for designing and testing dynamic and kinematic controllers for 6 DOF serial link robotic manipulators.

**Computer Training Centre**, Islamabad, Punjab, Pakistan  
*Computer Trainee Officer* **May, 1995 – May 1996**  
 Included graduate level course work in computer architecture, mathematical modeling, and control systems.

TEACHING  
EXPERIENCE**University of Ontario Institute of Technology**, Oshawa, Ontario, Canada*Assistant Professor***July, 2008 – present**

- Computer Architecture 2, CSCI 3050U, Winter 2008.
- Ethics, Law, and Social Impact of Computers, CSCI 4040U, Winter 2008.
- Computer Architecture 1, CSCI 2050U, Fall 2008.

**University of Toronto**, Toronto, Ontario, Canada*Lecturer***September, 2004 – August, 2007**

Taught undergraduate and graduate courses in the Department of Computer Science. Responsible for lectures, exams, homework assignments, course projects, and grading.

- Computer Graphics, CSC2504/418, Fall 2004.
- Introduction to Visual Computing, CSC320, Summer 2006.
- Introduction to Visual Computing, CSC320, Summer 2007.

*Guest Lecturer***January, 2004 – April, 2004**

- Computer Graphics, CSC2504/418, Winter 2004.
- Introduction to Scientific, Symbolic & Graphical Computation, CSC260, Winter 2004.

*Teaching Assistant***September, 1997 – August, 2004**

Duties included delivering tutorial lectures, leading weekly computer lab exercises, holding office hours, and grading assignments and exams.

- Computer Graphics, CSC2504/418, Summer 2004.
- The Why and How of Computing, CSC104, Summer 2004.
- Introduction to Scientific, Symbolic, & Graphical Computation, CSC260, Winter 2004.
- Computer Graphics, CSC2504/418, Fall 2003.
- Software Engineering, CSC2105/408, Winter 2003.
- Software Engineering, CSC2105/408, Fall 2002.
- Software Engineering 1, CSC444, Fall 2002.
- Introduction to Computer Science, CSC108, Summer 2002.
- Introduction to Computer Science, CSC108, Fall 2000.
- Introduction to Computer Programming, CSC148, Winter 2000.
- Computer Networks, CSC2209/CSC458, Winter 1999.
- Software Engineering 1, CSC442, Fall 1998.
- Software Engineering, CSC2105/408, Winter 1998.
- Computer Networks, CSC2209/CSC458, Fall 1997.

REFEREED JOURNAL  
PUBLICATIONS

3. “Smart Camera Networks in Virtual Reality,” F. Qureshi, D. Terzopoulos, *Proceedings of the IEEE*, **96**(10), October, 2008, 1–17, (Special Issue on “Smart Cameras”), in press.
2. “Intelligent Perception and Control for Space Robotics: Autonomous Satellite Rendezvous and Docking,” F. Qureshi, D. Terzopoulos, *Journal of Machine Vision Applications*, **19**(3), February, 2008, 141–161.
1. “Surveillance Camera Scheduling: A Virtual Vision Approach,” F. Qureshi, D. Terzopoulos, *ACM Multimedia Systems Journal*, **12**(3), December, 2006, 269–283 (Special Issue on “Multimedia Surveillance Systems”).

REFEREED  
CONFERENCE  
PUBLICATIONS

- [14] “Multi-Camera Control Through Constraint Satisfaction for Persistent Surveillance,” F. Qureshi, D. Terzopoulos, *5th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS '08)*, Santa Fe, NM, Septebmer, 2008, 1–8.
- [13] “A Simulation Framework for Camera Sensor Networks Research,” F. Qureshi, D. Terzopoulos, *11th Communications and Networking Simulation Symposium (CNS 2008)*,

- Ottawa, Canada, April, 2008, 41–48.
- [12] “Virtual Vision: Visual Sensor Networks in Virtual Reality,” F. Qureshi, D. Terzopoulos, *Proc. ACM Symposium on Virtual Reality Software and Technology (VRST 2007)*, Newport Beach, CA, November, 2007, 247–248.
  - [11] “Smart Camera Networks in Virtual Reality,” F. Qureshi, D. Terzopoulos, *Proc. First ACM/IEEE International Conference on Distributed Smart Cameras*, Vienna, Austria, Sep, 2007.
  - [10] “Distributed Coalition Formation in Visual Sensor Networks: A Virtual Vision Approach,” F. Qureshi, D. Terzopoulos, *Proc. Third IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS 07)*, Santa Fe, NM, June, 2007, 1–21.
  - [9] “Surveillance in Virtual Reality: System Design and Multicamera Control,” F. Qureshi, D. Terzopoulos, *Proc. IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR 07)*, Minneapolis, MN, June, 2007.
  - [8] “Virtual Vision and Smart Cameras Networks,” F. Qureshi, D. Terzopoulos, *Working Notes of the International Workshop on Distributed Smart Cameras (DSC 2006)*, Boulder, CO, USA, October, 2006, 62–66. (Held in conjunction with the 4th ACM Conference on Embedded Networked Sensor Systems (SenSys 2006).)
  - [7] “Surveillance Camera Scheduling: A Virtual Vision Approach,” F. Qureshi, D. Terzopoulos, *Proc. Third ACM Workshop on Video Surveillance and Sensor Networks (VSSN 05)*, Singapore, November, 2005, 131–139.  
*Selected as a best paper and invited for submission to a special issue of the ACM Multimedia Systems Journal.*
  - [6] “Towards Intelligent Camera Networks: A Virtual Vision Approach,” F. Qureshi, D. Terzopoulos, *Proc. Second Joint IEEE International Workshop on Visual Surveillance and Performance Evaluation of Tracking and Surveillance (VS-PETS 05)*, Beijing, China, October, 2005, 177–184.
  - [5] “A Computer Vision System for Space-borne Safety Monitoring,” F. Qureshi, D. Macrini, D. Chung, J. Maclean, S. Dickinson, P. Jasiobedzki, *Proc. Eighth International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS 2005)*, Munich, Germany, September, 2005 (Electronic Format).
  - [4] “Cognitive Vision for Autonomous Satellite Rendezvous and Docking,” F. Qureshi, D. Terzopoulos, P. Jasiobedzki, *Proc. Ninth IAPR Conf. on Machine Vision Applications (MVA 2005)*, Tsukuba Science City, Japan, May, 2005, 314–319.
  - [3] “A Cognitive Vision System for Space Robotics,” F. Qureshi, D. Terzopoulos, P. Jasiobedzki, *Proc. ECCV 2004 Workshop on Applications of Computer Vision*, Prague, Czech Republic, May, 2004, 120–128.
  - [2] “The Cognitive Controller: A Hybrid, Deliberative/Reactive Control Architecture for Autonomous Robots,” F. Qureshi, D. Terzopoulos, R. Gillette, *Proc. 17th International Conference on Industrial & Engineering Applications of Artificial Intelligence & Expert Systems (IEA/AIE 2004)*, Ottawa, Canada, May, 2004, 1102–1111.
  - [1] “Development of an Off-line Programming (OLP) System for a Serial Link Robot Manipulator,” F. Qureshi, M. Asif, M. Ahmed, A. Rauf, *Proc. IEEE (Pakistan Section)*, Islamabad, Pakistan, 1997.

- DISSERTATIONS
- [3] “Intelligent Perception in Virtual Sensor Networks and Space Robotics,” Ph.D. Thesis, Department of Computer Science, University of Toronto, Toronto, Canada, January, 2007.
  - [2] “Constructing Anatomically Accurate Face Models using Computed Tomography and Cyberware Data,” M.Sc. Thesis, Department of Computer Science, University of Toronto, Toronto, Canada, January, 2000.
  - [1] “TACS: A Tone Actuated Computer Control System,” M.Sc. Thesis, Department of Electronics, Quaid-e-Azam University, Islamabad, Pakistan, January, 1995.
- UNPUBLISHED REPORTS
- [1] “Construction of Facial Tissue using Cyberware and Computer Tomography Data,” Technical Report, Advanced Telecommunications Research Institute, Kyoto, Japan, August, 1999.
- CREATIVE WORKS:  
COVER  
ILLUSTRATIONS
- [1] “Pedestrian Segmentation and Tracking,” color image on the cover of the proceedings of the *Second Joint IEEE International Workshop on Visual Surveillance and Performance Evaluation of Tracking and Surveillance (VS-PETS 05)*, R. Chellappa, J. Ferryman, T. Tan (eds.), IEEE Computer Society Press, Beijing, China, October, 2005.
- INVITED TALKS
- [9] “Virtual Vision for Smart Camera Sensor Network Research,” Mitacs Seminar Series, McGill University, Montreal, Canada, February, 2009.
  - [8] “3D Virtual Environments for Camera Network Research,” Virtual Researcher on Call Program between the University of Ontario Institute of Technology and the Peel Region District School Board, Oshawa, Canada, November, 2008.
  - [7] “Virtual Vision: A New Paradigm for Camera Sensor Network Research,” University of Windsor Seminar Series, Windsor, Canada, February, 2007.
  - [6] “Applications of Computers & AI: Intelligent Perception in Camera Networks and Space Robotics,” Sunnybrook & Women’s Hospital Life Long Journey Lecture Series, Toronto, Canada, June, 2006.
  - [5] “Towards Intelligence Camera Networks: A Virtual Vision Approach,” Space Vision and Advanced Robotics Workshop, MDRobotics Ltd., Brampton, Canada, May, 2006.
  - [4] “Tracking Objects with a Network of Steerable Cameras,” Space Vision and Advanced Robotics Workshop, MDRobotics Ltd., Brampton, Canada, May, 2004.
  - [3] “CoCo – A Hybrid Architecture for Designing High-Level Controllers,” Montreal-Toronto Computer Vision Workshop, McGill University, Montreal, May, 2003.
  - [2] “Cognitive Controller,” Space Vision and Advanced Robotics Workshop, MDRobotics Ltd., Brampton, Canada, April, 2002.
  - [1] “Behavior and Cognitive Modeling for Autonomous Agents,” Space Vision and Advanced Robotics Workshop, MDRobotics Ltd., Brampton, Canada, April, 2001.
- CONTRIBUTED PRESENTATIONS
- [7] “Multi-Camera Control Through Constraint Satisfaction for Persistent Surveillance,” 5th IEEE International Conference on Advanced Video and Signal Based Surveillance (AVSS 08), Santa Fe, NM, September, 2008.
  - [6] “A Simulation Framework for Camera Sensor Networks Research,” 11th Communications and Networking Simulation Symposium (CNS 2008), Ottawa, Canada, April, 2008.
  - [5] “Distributed Coalition Formation in Visual Sensor Networks: A Virtual Vision Approach,” Third IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS 07) Santa Fe, NM, USA, June, 2007.

- [4] “Virtual Vision and Smart Cameras Networks,” International Workshop on Distributed Smart Cameras (DSC 2006), Boulder, CO, USA, October, 2006.
- [3] “Surveillance Camera Scheduling: A Virtual Vision Approach,” Third ACM Workshop on Video Surveillance and Sensor Networks (VSSN 05), Singapore, November, 2005.
- [2] “The Cognitive Controller: A Hybrid, Deliberative/Reactive Control Architecture for Autonomous Robots,” 17th International Conference on Industrial & Engineering Applications of Artificial Intelligence & Expert Systems (IEA/AIE 2004), Ottawa, Canada, May, 2004.
- [1] “A Cognitive Vision System for Space Robotics,” Workshop on Applications of Computer Vision, European Conference on Computer Vision (ECCV 04), Prague, Czech Republic, May, 2004.

PROFESSIONAL  
ACTIVITY

Reviewer for the *2009 IEEE Conf. on Computer Vision and Pattern Recognition (CVPR 09)*.  
 Reviewer for the *IEEE Transactions on Automation Science and Engineering*, 2008  
 Reviewer for the *International Journal of Computer Mathematics*, 2008  
 Reviewer for the 28th International Conference on Distributed Computing Systems (ICDCS 2008)  
 Program Committee Member for the *2007 IEEE International Conf. on Computer Vision (ICCV 07)*  
 Reviewer for the journal *Transactions on Sensor Networks*, 2007.  
 Reviewer for the *IEEE Journal of Selected Topics in Signal Processing*, 2008.  
 Reviewer for the *2008 European Conf. on Computer Vision (ECCV 08)*.  
 Reviewer for the *2007 IEEE Conf. on Computer Vision and Pattern Recognition (CVPR 07)*.  
 Reviewer for the journal *Pattern Recognition Letters*, 2006.  
 Reviewer for the *2006 IEEE Conf. on Computer Vision and Pattern Recognition (CVPR 06)*.  
 Reviewer for the *2006 SIGGRAPH Sketches* program.

SOFTWARE  
ENGINEERING

Sound understanding of large-scale software design and development principles  
 Developed physics-based simulations, computer graphics/data visualization packages, user interfaces, client-server applications, computer games, database applications, and text processing applications

PROGRAMMING  
SKILLS

C, C++, Java, Matlab, OpenGL, Open Inventor, Perl, Python, SQL, Unix shell scripts

VOLUNTEER  
WORK

Founding member of the executive committee of the Argentine Tango Club, University of Toronto, September 00 – August 02