

GURMAN GILL

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Darwin 116G, Sonoma State University

Rohnert Park, CA 94928

EDUCATION

McGill University, Montreal, Canada

Sep. 2003 – May 2009

Ph.D. in Electrical Engineering

Advisor : Prof. M. Levine

Indian Institute of Technology (IIT) Delhi, India

Aug. 1997 – July 2002

Integrated Bachelors and Masters in Mathematics and Computing

Advisors : Prof. J.B. Srivastava (Mathematics) and Prof. S.D. Joshi (Electrical Engineering)

TEACHING EXPERIENCE

Assistant Professor of Computer Science, Sonoma State University, USA August 2015 – Present

Teaching courses in introduction to programming (CS 115), discrete mathematical structures (CS 242), game programming (CS 330), team programming (CS 349), and image processing and object detection (CS 385).

Teaching Assistant (Image Processing), McGill University, Canada Fall Semester 2004 – 2008

Formulated assignments and quizzes, checked assignment code (C, C++, MATLAB), graded reports, maintained course website, and gave guest lectures.

Professional Development

POGIL Northwest Regional Workshop

July 2017

Participated in 3-day workshop to learn and facilitate Process Oriented Guided Inquiry Learning (POGIL) activities in classroom.

CSU 2017-18 Course Redesign with Technology (CRT) Summer Institute

June 2017

Completed a 5-day workshop as part of course redesign award for programming I (CS 115).

Association of College and University Educators (ACUE) online courses **August 2016 – May 2017**

Completed 6 courses towards Certificate in Effective College Instruction.

Redefining the College Lecture program, Sonoma State University

August 2015 – May 2016

Implementing techniques for actively engaging students.

Teaching Your Research workshop, University of Iowa, USA

June 2014 – July 2014

Developed syllabus for a course on “Object Classification, Detection and Recognition in 2D and 3D images.”

PROFESSIONAL EXPERIENCE

Postdoctoral Research Scholar, University of Iowa, Iowa City, IA, USA **July 2012 – July 2015**

Developing algorithms for lung segmentation in thorax CT scans for lungs with different pathology (Asthma, COPD, Cancer Masses, and Interstitial Lung Disease).

Game Programmer, Behavior Interactive, Montreal, Canada **Oct. 2009 – June 2012**

Worked on various aspects of game development: game play, user interface and systems. Shipped titles: Sims 3, Transformers: Dark of the Moon, Wipeout 2, Goldrun.

Intern, Max Planck Institute for Informatik, Saarbruecken, Germany **May – July 2001**

Developed software for 3D scanning of an object in the Graphics group AG4.

PEER-REVIEWED PUBLICATIONS

Published

G. Gill and R.R. Beichel, An approach for reducing the error rate in automated lung segmentation, *Computers in Biology and Medicine*, vol. 76, pages 143-153, Sep. 2016

G. Gill and R. R. Beichel, Lung Segmentation in 4D CT Volumes based on Robust Active Shape Model Matching, *International Journal of Biomedical Imaging*, vol. 3015, Article ID 125648, 9 pages, Sep. 2015.

G. Gill and R. R. Beichel, Segmentation of Lungs with Interstitial Lung Disease in CT Scans: A TV-L1 Based Texture Analysis Approach, *Advances in Visual Computing*, LNCS 8887, pp. 511-520, 2014.

G. Gill, M. Toews and R. R. Beichel, Robust Initialization of Active Shape Models for Lung Segmentation in CT Scans: A Feature-Based Atlas Approach, *International Journal of Biomedical Imaging*, vol. 2014, Article ID 479154, 7 pages, 2014. doi:10.1155/2014/479154

G. Gill, C. Bauer and R. R. Beichel, A Method for Avoiding Overlap of Left and Right Lungs in Shape Model Guided Segmentation of Lungs in CT Volumes, *Medical Physics*, Vol. 41, 101908, 2014, doi: 10.1118/1.4894817

G. Gill, M. Toews and R. R. Beichel, An Automated Initialization System for Robust Model-Based Segmentation of Lungs in CT Data, *5th International Workshop on Pulmonary Image Analysis*, pp. 111-122, 2013.

G. Gill and M. Levine, Multi-View Object Detection based on Spatial Consistency in a Low Dimensional Space, *German Association for Pattern Recognition*, LNCS 5748, pp. 211-220, 2009.

G. Gill and M. Levine, Incorporating Shape Features in an Appearance-Based Object Detection System, *Computer Analysis of Images and Patterns*, LNCS 5702, pp. 269-276, 2009.

G. Gill and M. Levine, A Single Classifier for View-Invariant Multiple Object Class Recognition, *British Machine Vision Conference*, volume 1, pages 257-266, 2006.

AWARDS AND HONORS

- SSU RSCAP Fellowship award in Summer 2017 for amount of \$3000. Title of the award: “Deep learning for classifying animals in the wild”.
- School of Science and Technology Dean’s award in Summer 2017 for the amount of \$2000. Title of the award: “Deep learning for classification of Interstitial Lung Disease in chest computed tomography scans”.
- *CSU 2017-18 Course Redesign with Technology (CRT) Award* for redesigning CS 115 (Programming I).
- SSU RSCAP Mini Grant award in Spring 2016 for amount of \$1994. Title of the award: “Applications of machine learning to practical problems”.
- NSF Stepping-up-STEM (S3) award in Summer 2016 for the amount of \$3000. Title of the award: “Object classification using machine learning on fMRI scans”.
- McGill University Principal’s Student-Athlete Academic Honor Roll Certificate 2008-09.
- Dr. Richard Tomlinson Doctoral Fellowship from Sep. 2003-2006 for the amount of \$30,000 awarded in recognition of academic excellence and research ability/potential.

SERVICE

University Service

Academic Advising Subcommittee, Sonoma State University

- Elected to represent School of Science and Technology in the Academic advising subcommittee Fall 2017 – Present

School of Science and Technology Curriculum committee, Sonoma State University

- Examining program reviews and course change proposals (addition, deletion, modification) August 2015 – May 2017

University of Iowa Postdoc Association (UIPDA)

- Collaboratively organized and acquired financial support for the Midwest Postdoctoral Symposium May 2014
- Secretary/Treasurer 2014-2015
- Professional Development Committee Chair Sep 2014 – May 2015
 - “Your Classroom, Your Stage”, Organized seminar on theatrical techniques applied to classroom teaching Feb. 2015
 - Organized career development seminar Oct. 2014

Community Service

Synopsys-Sonoma County STEAM showcase

March 2017

- Evaluating projects of 5 student teams

- Synopsys-Sonoma County Science Fair March 2016
- Judging posters of about 12 student teams in the “Cognitive Science” category
- Science of the Soul Study Center, Petaluma local chapter
- Managing audio board at main hall and translation booth Feb 2016- Present
- Science of the Soul Study Center, Montreal and Iowa City (Local Chapters)
- Quality Assurance lead for software development projects March 2010 – Sep. 2016

Academic Reviewer

Indian Conference on Computer Vision, Graphics and Image Processing	2016
Journal of Biomedical and Health Informatics (JBHI)	2015
Scientific World Journal (Hindawi)	2015
Computers and Electrical Engineering (CEE)	2014
Special Interest Group on Computer Science Education (SIGCSE)	2014
International Workshop on Pulmonary Image Analysis	2013
International Symposium on Visual Computing (ISVC)	2008
Computer Vision and Image Understanding (CVIU)	2007
Computer Analysis of Images and Patterns (CAIP)	2007
Pattern Analysis and Machine Intelligence (PAMI)	2006
International Conference on Image Analysis and Processing (ICIAP)	2003, 2005

ACADEMIC PRESENTATIONS

Who put the box around my face?

- Invited talk at the Physics Club, Coe College, Cedar Rapids, March 2015

What is Object Detection?

- Guest lecture for course on Information Systems, MBA Program, University of Iowa, Iowa City, Feb 2015

An Automated Initialization System for Robust Model-Based Segmentation of Lungs in CT Data

- Midwest Postdoctoral Symposium, University of Iowa, Iowa City, May 2014

Multi-view Object Detection based on Locally Linear Embeddings of Object Class and Background.

- Institute for Robotics and Intelligence Systems (IRIS), University of Southern California, Los Angeles, USA, Feb. 2012
- Institute of Electronics, Communications and Information Technology, Queen’s University Belfast, Northern Ireland, Jan. 2012
- Center for Biomedical Engineering Research, University of Bern, Switzerland, Jan. 2012