

Jeroen Chua

CONTACT INFORMATION

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Brown University
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RESEARCH INTERESTS

Machine Learning: Bayesian deep learning, Bayesian modeling/inference, hierarchical models
Vision: Object detection/localization/tracking, scene understanding, virtual and augmented reality

EDUCATION

Brown University, Providence, RI 2012 – Present
PhD Candidate in Computer Science (expected completion date: September 2017)

- Thesis: “Probabilistic Scene Grammars: A General-Purpose Framework For Scene Understanding”
- Advisor: Professor Pedro Felzenszwalb

University of Toronto, Toronto, ON 2010 – 2012
MASc in Electrical and Computer Engineering

- Thesis: “Factorizing shape and colour with patch-based shapelet models”
- Advisor: Professor Brendan Frey

University of Toronto, Toronto, ON 2005-2010
BASc in Engineering Science- major in Computer Engineering (honours)

- Thesis title: Object recognition with movable patches and HOG descriptors
- Thesis advisor: Professor Brendan Frey

RESEARCH EXPERIENCE

Brown University, PhD Candidate 2012 – Present
Working on a general-purpose framework for scene understanding with Prof. Pedro Felzenszwalb. Applications in object detection/localization, contour detection, object tracking, image segmentation, image denoising, and medical image analysis.

Microsoft Research, Research Intern Summer 2014
Worked on Counting Grid models, with applications in document visualization and retrieval, and scene classification. Worked with Dr. Nebojsa Jojic.

University of Toronto, MASc. Student 2010 – 2012
Worked on generative patch-based computer vision models for object recognition, scene understanding, and image segmentation with Prof. Brendan Frey

University of Toronto, Research Assistant 2009 – 2010
Worked on patch-based models in computer vision with Prof. Brendan Frey

University of Toronto, Research Assistant Summer 2008
Enhanced a Linux-based academic computer security system with Prof. Ashvin Goel

University of Toronto, Research Assistant Summer 2006
Discovered recipes to cheaply synthesize nanoparticles with useful optical properties with Prof. M. Cynthia Goh.

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| INDUSTRY EXPERIENCE | <p>Google Inc., Software Developer Engineer Intern Summer 2010 Worked on the Google Earth Engine team to build a framework to allow efficient computation of forest coverage from satellite images.</p> <p>Altera Corporation, Software Developer Engineer Intern 2008 – 2009 Developed software test infrastructure. Wrote and edited FPGA teaching material to be used in universities.</p> <p>Artificial Perceptions Laboratory, Team Lead Summer 2007 Led and coordinated the efforts of a team of four to develop a searchable database of pictures of Paris, France.</p> |
| CONFERENCE PAPERS | <p>Jeroen C. Chua, Inmar E. Givoni, Ryan P. Adams, Brendan J. Frey. Learning Structural Element Patch Models With Hierarchical Palettes. <i>IEEE Conference on Computer Vision and Pattern Recognition, June 2012.</i></p> |
| NON-REFEREED WORK | <p>Jeroen C. Chua, Pedro F. Felzenszwalb. Scene Grammars, Factor Graphs, and Belief Propagation. https://arxiv.org/abs/1606.01307</p> |
| WORKSHOP ABSTRACTS | <p>Jeroen C. Chua, Brendan J. Frey. Sparse coding with stel dictionaries. <i>Snowbird Learning Workshop, December 2012.</i> Oral presentation.</p> |
| BOOK CHAPTERS | <p>Jeroen C. Chua, Inmar E. Givoni, Ryan P. Adams, Brendan J. Frey. Bayesian Painting by Numbers: Flexible Priors for Colour-Invariant Object Recognition. <i>Computer Vision and Machine Learning for Image and Video Analysis. Eds. R. Cipolla, S. Battiato, G.M. Farinella - Studies in Computational Intelligence Springer-Verlag press, 2012.</i></p> |
| SERVICE | <p>Reviewer</p> <p>Neural Information Processing Systems(NIPS) 2013-2016 IEEE Conference on Computer Vision and Pattern Recognition(CVPR) 2011,2012,2015 IEEE International Conference on Computer Vision (ICCV) 2011</p> |
| TEACHING | <p>Teaching Assistant Brown University Winter 2016 ENG 2912P – Topics in Optimization</p> <p>Teaching Assistant Brown University Fall 2014 CS242 – Probabilistic Graphical Models</p> <p>Teaching Assistant University of Toronto Winter 2010 ECE244 – Programming Fundamentals</p> |
| HONORS AND AWARDS | <p>NSERC Canada Graduate Scholarship, – Master’s, \$17,500 2010 - 2011 Ontario Graduate Scholarship, \$15,000 2010 - 2011 NSERC Undergraduate Student Research Award 2008</p> |
| COMPUTER SKILLS | <p>MATLAB, C/C++, Java, Python Linux, Windows, L^AT_EX</p> |