

Parthipan Siva

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Skills

- Extensive experience in designing and implementing computer vision systems.
- Proficient in using Matlab and computer vision libraries such as OpenCV and IPP.
- Industrial experience in software design using C++, optimized C and SSE instruction sets.
- Excellent mathematical, analytical, and problem solving skills.
- Outstanding leadership and decision making skills.

Experience

R&D Positions

- 2007–2009 **Computer Vision Developer**, *Aimetis*, Waterloo, Canada.
- Developed real-time surveillance applications in C++ with optimized C, IPP, and SSE code.
 - Designed and implemented following real-time surveillance products:
 - people-tracking for indoor environments such as retail stores
 - overhead people-counting at bottleneck areas such as store entrances
 - abandoned baggage detection in public areas such as airports
 - identifying shoplifting in retail stores
 - Improved existing product lines:
 - Pan-Tilt-Zoom camera tracking of moving objects
- 2005 **Computer Vision Researcher**, *Tangam Gaming Inc.*, Waterloo, Canada.
- Developed real-time automated tracking of card games like blackjack
 - Presented the system at the Global Gaming Expo 2005 in Las Vegas
 - System implemented in C++ and OpenCV
- 2004–2005 **Undergraduate Research Assistant**, *University of Waterloo*, Waterloo, Canada.
- Developed a novel image thresholding algorithm for a real-time visual servoing system
- 2004 **Undergraduate Research Assistant**, *University of Waterloo*, Waterloo, Canada.
- Researched into perceptual importance maps, human visual system, and Gabor filters
- 2002–2003 **Student Hardware Designer**, *Leitch Technologies*, Toronto, Canada.
- Developed firmware for television broadcast equipment using C, VHDL, and assembly
 - Products designed include:
 - C firmware for an analog distribution amplifier
 - VHDL circuit for multi-standard video validation system
 - Assembly firmware for synchronizing clocks

Research Projects

- 2009– Present **Weakly Supervised Learning**, *Queen Mary University of London*, London, UK.
- Present PhD research project is on training object and action detectors using weakly annotated training data.
- 2005–2007 **Medical Image Processing**, *University of Waterloo*, Waterloo, Canada.
- MASc research project was on detecting frequency and orientation of cell division in time-lapse image of live axolotl embryo epithelia.
- 2000–2005 **Pattern Recognition**, *University of Waterloo*, Waterloo, Canada.
- Computer vision projects during my BASc includes:
- Symbol detection for the international aerial robotics competition
 - Face detection for a course on machine learning
 - Digital watermarking for Leitch Technologies

Other

- 2009–2012 **Teaching Assistant**, *Queen Mary University of London*, London, UK.
- Coordinated and assessed labs on HTML, CSS, PHP, JavaScript, and Flash
- 2007 **Program Co-Chair for BICV**, *University of Waterloo*, Waterloo, Canada.
- Co-Chaired Biomedical Imaging and Computer Vision Symposium
 - Organized and recruited industry exhibits
- 2005–2007 **Teaching Assistant**, *University of Waterloo*, Waterloo, Canada.
- Designed and presented lectures on object oriented programming in C++

Education

- 2012 **PhD in Computer Science**, *Queen Mary University of London*,
School of Electronics Engineering and Computer Science, London, UK.
- 2007 **MASc in Systems Design Engineering**, *University of Waterloo*,
Department of Systems Design Engineering, Waterloo, Canada.
- 2005 **BASc in Systems Design Engineering**, *University of Waterloo*,
Department of Systems Design Engineering, Waterloo, Canada.

Publications

- [1] P. Siva, C. Russell, and T. Xiang. *In defence of negative mining for annotating weakly labelled data*. ECCV, 2012.
- [2] Z. Shi, P. Siva, and T. Xiang. *Transfer learning by ranking for weakly supervised object annotation*. BMVC, 2012
- [3] P. Siva and T. Xiang. *Weakly supervised object detector learning with model drift detection*. ICCV, 2011.
- [4] P. Siva and T. Xiang. *Weakly supervised action detection*. BMVC, 2011.
- [5] P. Siva and T. Xiang. *Action detection in crowd*. BMVC, 2010. **Best Poster**
- [6] P. Siva, G. W. Brodland, and D. A. Clausi. *Detecting mitoses in time-lapse images of embryonic epithelia using intensity analysis*. *Annals of Biomedical Engineering*, 2009.
- [7] P. Siva, G. W. Brodland, and D. A. Clausi. *Detection of mitoses in embryonic epithelia using motion field analysis*. *Computer Methods in Biomechanics and Biomedical Engineering*, 2009.
- [8] P. Siva, G. W. Brodland, and D. A. Clausi. *Automated detection of mitosis in embryonic tissues*. *Canadian Conference on Computer and Robot Vision*, 2007.
- [9] P. Siva and C. C. W. Hulls. *Dynamic segmentation of small image windows for visual servoing*. *International Conference on Mechatronics and Automation*, 2005.
- [10] P. Siva, C. C. W. Hulls, and W. J. Wilson. *Dynamic segmentation of small image windows for visual servoing*. *Space, Vision, and Advance Robotics Workshop, MDA Space Missions 2005*.

Awards

- 2012 Best Poster, Research Open Day, Queen Mary University of London
- 2011 Best Oral, EECS Post Graduate Conference, Queen Mary University of London
- 2010 Best Poster, British Machine Vision Conference
- 2009–2012 EPSRC Scholarship
- 2007 The Sandford Fleming Foundation Teaching Assistantship Award, University of Waterloo
- 2006–2007 NSERC Alexander Graham Bell Canada Graduate Scholarship - Masters (CGS-M)
- 2006–2007 President's Graduate Scholarship, University of Waterloo