

# Matthew Johnson - Curriculum Vitae

## Contact Details

Work: Nokia Point & Find, Spear Tower, 1 Market Plaza, San Francisco, CA 94105.  
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## Personal Details

Current age: 29 years Date of Birth: 5<sup>th</sup> January 1981

Nationality: USA, UK, Canada Marital status: Married

## Research Interests

- **Computer Vision:**  
Image search and retrieval, object recognition, image segmentation, image synthesis
- **Natural Language Processing:**  
Word sense disambiguation
- **Machine Learning:**  
Support vector machines, Bayesian techniques, discriminative learning

## Education

- 2004 –2008 **Ph.D. in Computer Vision**  
Supervisor: Roberto Cipolla  
Engineering Department, University of Cambridge  
Thesis: *Semantic Segmentation and Image Search*
- 1999 – 2003 **Bachelor's Degree**  
University of Arizona  
Graduated December 2003 with Honors.
- 1994 – 1999 **Secondary School**  
International Baccalaureate program, North Canyon High School, Phoenix, AZ.  
Graduated 3<sup>rd</sup> in class with a 4.0 (on a 4.0 scale) average

## Employment

- 2008 –Present **Senior Software Engineer**  
Mobile Computer Vision Research and Development  
Nokia Point and Find  
San Francisco, CA
- 2008 – 2008 **VP of IT and Web Development**  
Louise Blouin Media  
New York, NY
- 2004 – 2004 **Lead Engineer, Windows Development Team**  
Limelight Networks  
Phoenix, AZ

## Papers

- M. Johnson  
**Generalized Descriptor Compression for Storage and Matching**  
In Proc. BMVC, to appear.
- J. Shotton, M. Johnson and R. Cipolla.  
**Semantic Texton Forests for Image Categorization and Segmentation.**  
In Proc. Int. Conf. Computer Vision and Pattern Recognition, June 2008.
- M. Johnson.  
**Semantic Segmentation and Image Search.**  
Ph.D. Thesis, University of Cambridge, April 2008.
- M. Johnson, G. Brostow, J. Shotton, O. Arandjelovic, V. Kwatra and R. Cipolla.  
**Semantic Photo Synthesis.**  
In Computer Graphics Forum, 25(3):407-413, September 2006.
- K. Barnard, K. Yanai, M. Johnson and P. Gabbur.  
**Cross Modal Disambiguation.**  
Toward Category-Level Object Recognition: Recognition of Object Categories. LNCS 4170/2006. Springer Berlin/Heidelberg. 2006.
- M. Johnson.  
**Using Machine Learning for Image Retrieval.**  
Cambridge University Engineering Department, First Year PhD Report, 2005.
- M. Johnson and R. Cipolla  
**Improved Image Annotation and Image Labelling Through Multi-Label Boosting.**  
In Proc. BMVC 2005.
- K. Barnard and M. Johnson.  
**Word Sense Disambiguation with Pictures.**  
Artificial Intelligence, Volume 167, pp. 13-30, 2005.
- K. Barnard, M. Johnson and D. Forsyth.  
**Word Sense Disambiguation with Pictures.**  
Workshop on Learning Word Meaning from Non-Linguistic Data, held in conjunction with The Human Language Technology Conference, Edmonton, Canada, May 27-June 1, 2003.

## Awards & Scholarships

- 2008 CVPR 2008 Demo Prize
- 2004 Louise T. MacBain Studentship
- 2004 NSF Graduate Research Fellowship, Honorable Mention
- 2003 Galileo Circle Scholarship
- 2003 Intel Undergraduate Research Grant
- 2002 Microsoft Research Grant for development of courses utilizing C#
- 1999 Flinn Foundation Scholarship
- 1999 University of Arizona, President's Scholarship
- 1999 Young Man of the Year for the City of Phoenix
- 1999 Member, Academic Decathlon State Championship team, 5<sup>th</sup> at nationals.

## Computing Ability

Excellent programming skills in C#, C++/CLI, C, Java, among others.  
Comfortable in Windows and Linux.  
Extensive software development experience in industry and academia

## Academic Employment

- Summer 2005 **LTB Foundation, New York NY**  
Research and Development Intern
- Summer 2003 **Lockheed-Martin Space Systems, Denver CO**  
Research and Development Intern
- Fall 2001 – Spring 2004 **University of Arizona, Tucson AZ**  
Teaching assistant for Stuart Reges
- Fall 2002 - Spring 2004 **University of Arizona, Tucson AZ**  
Research assistant for Dr. Kobus Barnard

## References

### **Prof. Roberto Cipolla** - *PhD Supervisor*

Cambridge University Engineering Department, Trumpington St,  
Cambridge, CB2 1PZ, UK.

[cipolla@eng.cam.ac.uk](mailto:cipolla@eng.cam.ac.uk)

### **Dr. Kobus Barnard** - *Honors Thesis Supervisor*

Department of Computer Science, University of Arizona, P.O. Box 210077,  
Tucson, AZ 85721-0077, USA

[kobus@cs.arizona.edu](mailto:kobus@cs.arizona.edu)

### **Dr. Gabriel Brostow** - *Collaborator*

University College London, Dept. of Computer Science, Gower Street,  
London WC1E 6BT, UK

[g.brostow@cs.ucl.ac.uk](mailto:g.brostow@cs.ucl.ac.uk)

### **Dr. John Winn** - *Research Scientist*

Microsoft Research, 7 JJ Thomson Ave, Cambridge CB3 0FB, UK.

[jwinn@microsoft.com](mailto:jwinn@microsoft.com)

*(further references available on request)*

### Invited Talks & Oral Presentations

- July 2009 **Invited Speaker**  
International Computer Vision Summer School 2009
- July 2007 **Invited Laboratory**  
International Computer Vision Summer School 2007
- March 2007 **Invited Oral Presentation**  
SPIE: Human Vision and Electronic Imaging
- September 2006 **Oral Presentation**  
Eurographics 2006
- May 2003 **Oral Presentation**  
Workshop on Learning Word Meaning from Non-Linguistic Data
- February 2002 **Oral Presentation**  
SIGCSE 2002

### Extra Curricular Interests & Activities

#### Interests:

Singing, Computer Games, Violin, Theatre, Literature, Art, Karate

#### Committees:

Hughes Hall MCR - *Secretary* (2004-2006)

U of A ACM Student Chapter - *Chair* (2000-2001,2002-2003), Founding Member

#### Activities:

Cambridge Graduate Orchestra (2004-2005)

The Arizona Symphony Orchestra (2002-2004)

Queens' College Chapel Choir (2006 - present)

Jesus College Chapel Choir (2005-2006)

CUMS Chorus (2004-2005)

U of A Symphonic Choir (2003-2004)