

Matthew Johnson - Curriculum Vitae

Contact Details

Work: Unicorn Media, 24 W 5th Street, Tempe, AZ 85281

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Personal Details

Current age: 32 years Date of Birth: 5th January 1981

Passports: 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:**
Decision forests, Support vector machines, Bayesian techniques

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 3rd in class with a 4.0 (on a 4.0 scale) average

Employment

- 2011–present **Executive VP of Engineering**
Unicorn Media, Inc.
Tempe, AZ
 - Built and managed 35-person organization (support and dev)
 - Chief software architect
 - Designed and developed large-scale cloud analytics platform
 - Designed and developed cloud computing architecture
 - Managed patent portfolio
- 2008 –2011 **Senior Software Engineer**
Mobile Computer Vision Research and Development
Nokia Point and Find
San Francisco, CA
 - R/D of core patented technology for Nokia City Lens
 - R/D of embedded computer vision techniques

Papers

- M. Johnson
Generalized Descriptor Compression for Storage and Matching
In Proc. BMVC, August 2010.
- 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, 5th 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

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

Dr. Gabriel Brostow - *Collaborator*

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

g.brostow@cs.ucl.ac.uk

Dr. John Winn - *Research Scientist*

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

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:

St. Thomas Church Choir (2011-present)

North Valley Chorale (2010-present)

Cambridge Graduate Orchestra (2004-2005)

The Arizona Symphony Orchestra (2002-2004)

Queens' College Chapel Choir (2006 - 2008)

Jesus College Chapel Choir (2005-2006)

CUMS Chorus (2004-2005)

U of A Symphonic Choir (2003-2004)