

MICHELE MERLER

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EDUCATION

- 2007-now : **Columbia University, New York**
Ph.D. Student, Department of Computer Science.
Advisor: Professor John Kender
Thesis title: "Analysis, Indexing and Visualization of Presentation Videos"
- 2008 : **Columbia University, New York**
M.S. in Computer Science
GPA: 3.8/4.00
- 2007 : **University of Trento, Italy**
M.S. (Laurea Specialistica) in Telecommunications Engineering
Final Grade: 110/110 Cum Laude.
- 2005-06 : **University of California San Diego**
Visiting student. Relevant Courses: Computer Vision I and II
GPA:3.794/4.00.
- 2004 : **University of Trento, Italy**
B.S. (Laurea) in Telecommunications Engineering
Final Grade: 110/110 Cum Laude.

PROFESSIONAL EXPERIENCE

- September 2007-
now : **Columbia University, New York**
Graduate research assistant, High Level Vision Lab
Advisor: Professor John Kender

Analysis, indexing and enhancement of unstructured videos of presentations based on textual, graphical and facial cues.
- Summer 2010 : **IBM T.J. Watson Research Center**
Intern, Intelligent Information Management Department
Manager: Apostol Natsev, Mentor: Gang Hua

Development of face matching and complex video event detection and recognition algorithms
- Summer 2009-
January 2010 : **IBM T.J. Watson Research Center**
Intern and Technical Co-op, Intelligent Information Management Department. Manager: Apostol Natsev, Mentor: Rong Yan

Development of local feature-based representations for concept detection and face recognition in multimedia collections.

- Summer 2008-December 2008 : **IBM T.J. Watson Research Center**
Intern and Technical Co-op, Intelligent Information Management Department. Manager: Apostol Natsev, Mentor: Rong Yan
Development of an imbalanced boosting method for combining ranking features on large scale databases
- Summer 2006 : **California Institute for Telecommunications and Information Technology**
Intern, University of California San Diego branch
Advisor: Professor Serge Belongie
Development of a multimedia database of groceries in the framework of the GroZi project. Performance evaluation of state of the art detection and recognition algorithms on such dataset
- Summer 2004 : **Create-Net International Research Center**
Researcher, Trento, Italy branch
Advisor: Professor Francesco De Natale
Development of human detection, visual tracking and user-computer interaction algorithms for real time applications

ACADEMIC HONORS AND SCHOLARSHIPS

ACM Multimedia 2010 and 2011 Travel Grant

2009-2010 Yahoo! Key Scientific Challenge Award Winner (1 of 20 award recipients nationally, scholarship and participation in summit)

Summer 2006 California Institute of Information and Telecommunications Technology Summer Undergraduate Research Scholar (1 of 25 award recipients)

2005-2006 University of Trento International Cooperation and Mobility Program: University of California Scholar (1st out of 5 selected candidates)

TEACHING EXPERIENCE

- Fall 2010 and Spring 2011 : **Columbia University Preceptor**
COMS 1003 - Introduction to Computer Science and Programming in C Full Course (3 credits)
Duties: full responsibility, prepare and administer lectures, homeworks and exams, grade class
- Fall 2009 and Spring 2010 : **Columbia University Departmental Instructor**
COMS 3101 - Programming Languages (Matlab) Short Course (1 credit)
Duties: full responsibility, prepare and administer lectures, homeworks and exams, grade class
- Spring 2009 : **Columbia University, Teaching Assistant**
COMS 4735 - Visual Interfaces to Computers
Duties: correct an grade homeworks

PUBLICATIONS

Michele Merler, Bert Huang, Lexing Xie, Gang Hua, and Apostol Natsev, “Semantic Model Vectors for Complex Video Event Recognition”, *accepted for publication in IEEE Transactions on Multimedia, Special issue on Object and Event Classification in Large-Scale Video Collections*, 2012

Michele Merler and John Kender, “Selecting the Best Faces to Index Presentation Videos”, *ACM Multimedia (Short Paper)*, 2011

Michele Merler and John Kender, “Analysis, Indexing and Visualization of Presentation Videos”, *ACM Multimedia (doctoral symposium)*, 2011

Liangliang Cao, Shih-Fu Chang, Noel Codella, Courtenay Cotton, Dan Ellis, Leiguang Gong, Matthew Hill, Gang Hua, John Kender, **Michele Merler**, Yadong Mu, Apostol Natsev and John R. Smith, “IBM Research and Columbia University TRECVID-2011 Multimedia Event Detection (MED) System”, *NIST TRECVID Workshop*, 2011

Matthew Hill, Gang Hua, Apostol Natsev, John R. Smith, Lexing Xie, Bert Huang, **Michele Merler**, Hua Ouyang and Mingyuan Zhou, “IBM Research TRECVID-2010 Video Copy Detection and Multimedia Event Detection System”, *NIST TRECVID Workshop*, 2010.

Apostol Natsev, Matthew Hill, John R. Smith, Lexing Xie, Rong Yan, Shenghua Bao, Dong Wang, **Michele Merler** and Yi Zhang, “IBM research TRECVID-2009 video retrieval system”, *NIST TRECVID Workshop*, 2009. Ranked #1 on Content Based Copy Detection Task

Michele Merler and John Kender, “Semantic Keyword Extraction via Adaptive Text Binarization of Unstructured Unsources Video”, *IEEE Conf. on Image Processing (ICIP)*, 2009

Rong Yan, Marc-Olivier Fleury, **Michele Merler**, Apostol Natsev and John R. Smith, “Large-Scale Multimedia Semantic Concept Modeling using Robust Subspace Bagging and Map-Reduce”, *ACM Multimedia Workshop LS-MMRM*, 2009

Michele Merler, Rong Yan and John R. Smith, “Imbalanced RankBoost for Efficiently Ranking Large-Scale Image/Video Collections”, *IEEE Conference Computer Vision and Pattern Recognition (CVPR)* 2009.

Apostol Natsev, Wei Jiang, **Michele Merler**, John Smith, Jelena Tesic, Lexing Xie, Rong Yan, “IBM research TRECVID-2008 video retrieval system”, *NIST TRECVID Workshop*, 2008.

Michele Merler, Carolina Galleguillos and Serge Belongie, “Recognizing Groceries *in situ* Using *in vitro* Training Data”, *IEEE CVPR SLAM Workshop*, Minneapolis, MN, June 2007

PATENTS AND APPLICATIONS

Rong Yan, **Michele Merler** and John R. Smith. “Methods and apparatus for imbalance boosting for large scale data Collections”. Invention disclosure, IBM, September 2008

Michele Merler and John R. Kender, “Kalman Filter Approach to Augment Object Tracking”, Invention disclosure, Columbia University, March 2011

TALKS

Internship review presentation, “Complex Video Event Classification and Automatic Learning of Visual Attributes”, at IBM T.J. Watson Research Center, Hawthorne, NY, August 2011

Key Scientific Challenge Poster Session, “Analysis, Indexing and Visualization of Presentation Videos”, Yahoo Research Labs, Sunnyvale, CA, September 2009

Internship review presentation, “Semantic Concept Recognition in Really Unconstrained Multimedia Collections”, at IBM T.J. Watson Research Center, Hawthorne, NY, August 2009

Internship review presentation, “Imbalanced Boosting for Ranking Large-Scale Data Collections”, at IBM T.J. Watson Research Center, Hawthorne, NY, September 2008

Oral presentation, “Recognizing Groceries *in situ* Using *in vitro* Training Data”, International Computer Vision Summer School (ICVSS), Sicily, Italy, July 2007

DEPARTMENT SERVICE

Creator, in February 2009, of the Columbia University Computer Science Department PhD students’ electronic newsletter, managed until May 2010. Responsibilities: collect, organize and report news regarding milestones, publications, talks, award, honors and personal events (engagements, weddings, births) for people in the department.

PROFESSIONAL ACTIVITY

Reviewer:

IEEE Transactions on Multimedia, IEEE Transactions on Image Processing, IEEE Transactions on Circuits and Systems for Video Technology, IPSJ Transactions on Computer Vision and Applications, Journal of Visual Communication and Image Representation, ACM International Conference on Multimedia Retrieval, ACM Multimedia, ACM Multimedia Open Source Software Competition, IEEE CVPR, IEEE International Conference on Semantic Computing

Conference organization volunteer:

ICME 2009

TECHNICAL SKILLS

Programming Languages: C/C++, Matlab, OpenCV library, Perl, TeX/LaTeX
Software: Visual Studio, Adobe Photoshop, Microsoft Office
Operating Systems: Windows NT/XP/2000, Unix/Linux

LANGUAGES

Italian (native), English (fluent), Spanish (intermediate), German (basic)

OTHER INTERESTS

Sports: soccer (winner of the IBM soccer summer league 2009 with the green team!), swimming, hiking
Leisure: reading graphic novels, travel, multicultural experiences