

MARCO ANDREETTO

EDUCATION

California Institute of Technology (Pasadena, CA, USA) Oct. 2010 (*Exp. Grad.*)

Ph.D. Candidate in Electrical Engineering

Advisor: Prof. Pietro Perona

- Thesis: Unsupervised segmentation and recognition of objects in image collections.

California Institute of Technology (Pasadena, CA, USA) June 2005

M.S. in Electrical Engineering

GPA: 4.1 / 4.0

- Awarded Atwood Fellowship, Caltech Electrical Engineering Dept.
- Successfully completed graduate courses in Machine Learning, Computer Vision, Numerical Mathematics, Optimization Theory, Probability Stochastic Processes, Montecarlo Simulation, Statistics and Data Analysis, and Information Theory.

University of Padova (Padova, Italy) April 2001

“Laurea” Degree (B.Sc.) in Computer Engineering

Final grade: 110 / 110

- Graduated Cum laude
- Successfully completed courses in Computer Science, Real and Complex Analysis, Linear Algebra, Communication Theory, Digital Signal Processing, and Dynamical Systems.

PROFESSIONAL SKILLS

Background: Machine learning, computer vision, statistical modeling, Montecarlo methods, Bayesian inference, numerical computing, algorithm design and implementation, and data analysis.

Programming and Systems: Software development in C, C++ (STL). Basic experience with Java and Python. Familiarity with Windows and UNIX systems, version control systems, and distributed computing.

WORK EXPERIENCE

California Institute of Technology (Pasadena, CA, USA) October 2003 - Present

Computer Vision Lab

Graduate Research Assistant

- Developed probabilistic models and inference algorithms for simultaneous segmentation and recognition of recurring objects in image collections. Implementation in C++ (STL, Boost), MATLAB, and Python.
- Developed software for 3D reconstruction of objects using silhouette and self-shadow information. Implementation in C/C++ (STL, OpenGL).

Microsoft Research (Cambridge, UK)

Summer 2006

Machine Learning & Perception Group

Intern

- Developed an application for improving image search results. Implementation in C++ (STL, OpenCV) and MATLAB.

University of Padova (Padova, Italy)

May 2001 – September 2003

Dept. of Information Engineering

Research Assistant

Laboratory for Multimedia Telecommunications and Technologies

- Designed and developed a complete software suite for automatic construction of 3D models of free-form objects. Implementation in C++ (STL, OpenGL).

PUBLICATIONS

JOURNALS:

- **M. Andreetto**, L. Zelnik-Manor, and P. Perona, "Unsupervised Learning of Categorical Segments in Image Collections", IEEE Transactions on Pattern Analysis and Machine Intelligence (PAMI), Submitted.
- N. Brusco, **M. Andreetto**, Luca Lucchese, S. Carmignato, and G. M. Cortelazzo, "Metrological Validation for 3D Modeling of Dental Plaster Casts", Medical Engineering and Physics, vol. 29, no. 9, pp 954-966, November 2007.
- S. Savarese, **M. Andreetto**, H. Rushmeier, F. Bernardini, and P. Perona, "Shadow Carving" International Journal of Computer Vision (IJCV), vol. 71, No. 3, pp. 305-336.
- **M. Andreetto**, N. Brusco, and G. M. Cortelazzo, "Automatic 3D Modeling of Textured Cultural Heritage Objects", IEEE Transaction on Image Processing, vol. 13, no. 3, pp. 354-369, March 2004.

CONFERENCE PAPERS:

- **M. Andreetto**, L. Zelnik-Manor, and P. Perona, "Unsupervised Learning of Categorical Segments in Image Collections", Sixth IEEE Computer Society Workshop on Perceptual Organization in Computer Vision (POCV08), in CVPR08, Anchorage, Alaska, Jun. 2008.
- **M. Andreetto**, L. Zelnik-Manor, and P. Perona, "Non-parametric Probabilistic Image Segmentation", Eleventh IEEE International Conference on Computer Vision (ICCV07), Rio de Janeiro, Brazil, Oct. 2007.
- **M. Andreetto**, S. Savarese, and P. Perona, "Carving from Ray-tracing Constraints: IRT-carving", Third International Symposium on 3D Data Processing Visualization and Transmission (3DPVT06), Chapel Hill, USA, Jun. 2006.
- N. Brusco, **M. Andreetto**, A. Giorgi, and G. M. Cortelazzo, "3D-Registration by Textured Spin-Images", The 5th International Conference on 3-D Digital Imaging and Modeling (3DIM05), Ottawa, Ontario, Canada, June 13-16, 2005.
- N. Brusco, **M. Andreetto**, S. Carmignato and G. M. Cortelazzo, "Metrological Analysis of a Procedure for the Automatic 3D Modeling of Dental Plaster casts", Second International Symposium on 3D Data Processing Visualization and Transmission (3DPVT04), Thessaloniki, Greece, Sep. 2004.
- **M. Andreetto**, L. Lucchese, and G. M. Cortelazzo, "Frequency Domain Registration of Computer Tomography Data", Second International Symposium on 3D Data Processing Visualization and Transmission (3DPVT04), Thessaloniki, Greece, Sep. 2004, pp 550-557.
- **M. Andreetto**, N. Brusco, and G. M. Cortelazzo, "Automatic 3D Modeling of Palatal Plaster Casts", The 4th International Conference on 3-D Digital Imaging and Modeling (3DIM03), Banff, Alberta, Canada, 2003.
- **M. Andreetto**, N. Brusco, and G. M. Cortelazzo, "Automatic 3D Modeling of Archaeological Objects", IEEE Workshop on Applications of Computer Vision in Archaeology (ACVA03), in conjunction with Computer Vision and Pattern Recognition (CVPR03), Madison, Wisconsin, 2003.

REFERENCES

Pietro Perona,
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Silvio Savarese,
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