Jarrell Waggoner

Biographical Data

Address:	Department of Computer Science and Engineering, University of South Carolina, Columbia, SC 29208
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Citizenship:	United States Citizen

Web

Twitter:	@malloc47
Blog:	www.malloc47.com
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Education

Present	Ph.D. Candidate in Computer Science	**University of South Carolina**
May 2009	Master of Engineering in Computer Science	**University of South Carolina**
May 2006	Bachelor of Science in Computer Science	**Bryan College**
May 2004	Associate of Science in Computer Science	**University of South Carolina at Lancaster**

Experience

2011—Present | **Research Assistant** funded by AFOSR
Materials Volume Segmentation
Developed segmentation methods for materials image volumes in *Python+NumPy/SciPy* and *MATLAB* at the Computer Vision Lab at USC. Managed the lab computer network and organized weekly lab meetings. Created GUI interface using wxWidgets for assisted segmentation, and conducted large-scale evaluations on multiple datasets for metallic and biological materials.

2011—Present | **Project Manager** at Palmetto Computer Labs
Assisted in planning the POSSCON conference. Managed the Open IT Lab and associated projects (Android Development). Provided software support for websites and managed projects.

2011 | **Contractor** for Elastic Vision Consulting
Created a parser and generator for XML medical records formats (CCR and CCD) in Java using JDOM, JAXB, SAX, Xerces, and Hibernate (HSQLDB), on an Axis2+Jetty6 driven server.

2010—2011 | **Research Assistant** funded by DARPA
Video Event Recognition
Explored segmentation methods for video event recognition. Attended P.I. meetings in San Diego (2010) and Colorado (2011). Developed algorithms in *Scheme* to process a corpus of thousands of videos extracted into over 3 million frames using a high-performance computing cluster.

2009—2010 | **NSF Fellow** at the USC Center for Digital Humanities
Digital Collation
Created a digital collation application to handle automatic differencing of sub-textual inconsistencies among multiple copies of *The Faerie Queene* by Edmund Spenser in *MATLAB* to process tens of thousands of book page images.

Personal and Open Source Projects

term-do | A completion engine that is a hybrid of gnome-do and Emacs's ido-mode. Works on many tested VT100 terminal types and is built in C++. Includes full client/server architecture implemented with boost.interprocess and complete plugin system with bindings for multiple languages.
http://www.github.com/malloc47/term-do

GIT-HQ | A remote management system for git, coded in Python.
http://www.github.com/malloc47/git-hq

MATSCICUT | An energy minimization framework for segmenting 3D materials volumes. Prototype of dissertation work, created in C++ using OpenCV libraries, with assorted MATLAB helper utilities.
http://www.github.com/malloc47/matscicut

Publications

[C1] Andrei Barbu, Alexander Bridge, Dan Coroian Zachary Burchill, Sven Dickinson, Sanja Fidler, Aaron Michaux, Sam Mussman, Dhaval Salvi Siddharth Narayanaswamy, Lara Schmidt, Jeffrey Mark Siskind Jiangnan Shangguan, Jarrell Waggoner, Jinlian Wei Song Wang, Yifan Yin, and Zhiqi Zhang. Video in sentences out. In *Conference on Uncertainty in Artificial Intelligence*, pages 102--112, Catalina Island, CA, 2012.

[C2] Jarrell Waggoner, Jeff Simmons, Marc De Graef, and Song Wang. Graph cut approaches for materials segmentation preserving shape, appearance, and topology. In *International Conference on 3D Materials Science*, pages 147--152, Seven Springs, PA, 2012.

[C3] Jarrell Waggoner, Jeff Simmons, and Song Wang. Combining global labeling and local relabeling for metallic image segmentation. In *Proceedings of SPIE (Computational Imaging X)*, volume 8296, Burlingame, CA, 2012.

[C4] Zhiqi Zhang, Sanja Fidler, Jarrell Waggoner, Yu Cao, Sven Dickinson, Jeffrey Mark Siskind, and Song Wang. Superedge grouping for object localization by combining appearance and shape information. In *IEEE Conference on Computer Vision and Pattern Recognition*, pages 3266--3273, Providence, RI, 2012.

[C5] Song Wang, Jarrell Waggoner, and Jeff Simmons. Graph-cut methods for grain boundary segmentation. *JOM Journal of the Minerals, Metals and Materials Society*, 63:49--51, 2011.

[C6] Andrew Temlyakov, Brent C. Munsell, Jarrell Waggoner, and Song Wang. Two perceptually motivated strategies for shape classification. In *IEEE Conference on Computer Vision and Pattern Recognition*, pages 2289--2296, 2010.

[C7] Zhiqi Zhang, Yu Cao, Dhaval Salvi, Kenton Oliver, Jarrell Waggoner, and Song Wang. Free-shape subwindow search for object localization. In *IEEE Conference on Computer Vision and Pattern Recognition*, pages 1086--1093, 2010.

Honors/Awards

2012	Graduate Student Day Presentation, First Place	USC
2011	Graduate Student Day Presentation, Second Place	
2009	Upsilon Pi Epsilon	
2006	Senior Computer Science Award	Bryan College
2004	Clara P. Hammond Award	USCL
	Science and Mathematics Award	
	Highest Academic Average Award	

Skills & Languages

» Bash	• • • •	» HTML/CSS	• • • •	» PHP	• • • •
» Blender	• • •	» Java	• • • • •	» Python	• • •
» C/C++	• • • •	» Javacript	• • •	» Ruby	•
» English	• • • • •	» LaTeX	• • • •	» Scheme	• • • • •
» GIT/SVN/CVS	• • • •	» MATLAB	• • • • •	» Wordpress	• • • •
» GNU/Linux	• • • •	» OpenCV	• • • •		

- • Small-scale projects and/or assignments
- • • Implementation-specific experience
- • • • Quite familiar, used in larger projects
- • • • • Extensive knowledge or experience teaching
- • • • • • Used in context of large-scale and/or multi-group projects

Interests and Activities

Programming, Teaching, Mathematics
Open-source Software, Systems Administration, Linux
Typography, Music Composition