Jarrell Waggoner

Biographical Data

Address: Department of Computer Science and Engineering, University of South Carolina, Columbia, SC 29208
Phone: 847-261-4747
email: jarrell.waggoner@gmail.com

Online

Website: www.malloc47.com
Twitter: @malloc47
github: github.com/malloc47
LinkedIn: linkedin.com/in/malloc47

Education

Expected Aug. 2013	**Ph.D.**	Computer Science & Engineering	**University of South Carolina**
May 2009	**M.E.**	Computer Science & Engineering	**University of South Carolina**

Experience

2012—Present | **Technical Lead** at Huntstand, Inc.

Developed the huntstand.com web application using Python+Django with a PJAX frontend deployed to AWS; responsible for curating full technology stack and coordinating with five developers.

2011—Present | **Research Assistant** funded by AFOSR

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 interactive 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*, on an *Axis2+Jetty6* driven server.

2010—2011 | **Research Assistant** funded by DARPA Mind's Eye Program

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

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.

2007—2011 | **Teaching Assistant** for USC Department of Computer Science and Engineering

Taught classes in software development, web development, and computer engineering, utilizing *Java*, *Javascript*, *HTML/CSS*, and *Visual Basic*. Supervised labs, developed and graded assessments, tutored students.

Personal and Open Source Projects

nonpartisan.me | Google Chrome extension that filters social media websites for political keywords. Available on the Chrome Web Store. Featured in the Charleston City Paper.
www.github.com/malloc47/nonpartisan.me

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. Available in the Arch Linux AUR. www.github.com/malloc47/term-do
RATIO CONTOUR	Maintainer of the Ratio Contour contour grouping project, created in C and MATLAB. www.github.com/malloc47/ratio-contour
DIGITAL COLLATION	Research project to "collate" high-resolution documents by using image registration, accomplished using the SIFT feature detector and a thin plate spline warping technique, written in MATLAB. www.github.com/malloc47/digital-collation

Selected Publications

[C1] **Jarrell Waggoner**, Youjie Zhou, Jeff Simmons, Ayman Salem, Marc De Graef, and Song Wang. Interactive grain image segmentation using graph cut algorithms. In *Proceedings of SPIE (Computational Imaging XI)*, (to appear).

[C2] 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.

[C3] **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.

[C4] **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.

[C5] 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.

[C6] 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.

[C7] 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.

[C8] 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 at USC

2012	Gamecock Computing Research Symposium Poster Session, First Place	2004	Clara P. Hammond Award
2012	Graduate Student Day Presentation, First Place	2004	Science and Mathematics Award
2009	Upsilon Pi Epsilon	2004	Highest Academic Average Award

Skills & Languages

••• Bash	••• GNU/Linux	•• jQuery	• PHP
••• C/C++	• Haskell	•• LaTeX	••• Python
• Emacs Lisp	••• HTML/CSS	••• MATLAB	•• Django
••• English	••• Java	••• NumPy/SciPy	••• Scheme
•• git	•• Javacript	••• OpenCV	•• SQL

- • Small-scale projects and/or assignments
- •• Multiple projects and/or experience teaching
- ••• Large-scale and/or multi-group projects

Interests and Activities

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