Jarrell Waggoner

Biographical Data

Address: Department of Computer Science and Engineering,
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Citizenship: United States Citizen

Research Interests

Computer vision, segmentation, contour completion, perceptural grouping, document image analysis, event recognition, image processing.

Education

Present — Ph.D. Candidate in Computer Science, **University of South Carolina**
Advisor: Dr. Song Wang

May 2009 — Master of Engineering in Computer Science, **University of South Carolina**
GPA: 3.8/4.0 | *magna cum laude*

May 2006 — Bachelor of Science in Computer Science, **Bryan College**
summa cum laude

May 2004 — Associate of Science in Computer Science
University of South Carolina at Lancaster
GPA: 4.0/4.0 | *summa cum laude*

Research Experience

2011—Present | Research Assistant funded by AFOSR
Materials Volume Segmentation
Developed segmentation methods for materials image volumes. Created GUI interface for assisted segmentation, and conducted large-scale evaluations on multiple datasets for metallic and biological materials.

2010—2011 | Research Assistant funded by DARPA
Video Event Recognition
Explored segmentation methods for video event recognition while working at the Computer Vision Lab at USC. Managed lab computer network and organize weekly lab meetings. Attended P.I. meetings in San Diego (2010) and Colorado (2011). Visited Purdue University working with Dr. Jeffrey Mark Siskind (Dec 2010—Jan 2011).

2009—2010 | NSF Fellow at the Center for Digital Humanities
Digital Collation
Created a digital collation application to handle automatic differencing of subtextual inconsistencies among multiple copies of *The Faerie Queene* by Edmund Spenser. p

Teaching Experience

2008—2009 | **GK-12 Fellow at Crayton Middle School**
Teaching 8th Grade Science
Served in Crayton Middle School, coordinating with the classroom instructor to enhance the science curriculum and activities in an 8TH grade science classroom. Subsequently coordinated and taught at the GK-12 Institute for Teachers, presenting the activities developed and delivered in the classroom.

2007—2008, 2011 | **Graduate Teaching Assistant at USC**
Teaching Software Development and Web Scripting
Supervised CSCE 145 labs, covering software development with Java, and taught CSCE 102, covering Javascript, HTML, and CSS. Taught CSCE 211 covering digital logic design.

Spring 2007 | **Instructor for CSCE 204 at USCL**
Teaching Introductory Programming
Hired as special faculty. Taught introductory Visual Basic for majors and non-majors. Selected textbooks, developed all course material, graded all assignments. Worked with Dr. Noni M. Bohonak

Fall 2006 | **Camp Instructor for USCL Arts and Sciences Adventure Camp**
Teaching 5th-8th Grade Students
Worked in collaboration with Dr. Dwayne Brown. One of two instructors teaching Math and Computer Science to grade school students.

2003—2007 | **Professional Tutor at USCL Academic Success Center**
Tutoring High School and College Students
Student and graduate tutor for college-level Mathematics, Computer Science, Physics, and English classes.

Publications

[C1] 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.

[C2] 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.

[C3] Andrew Temlyakov, Brent C. Munsell, Jarrell W. Waggoner, and Song Wang. Two perceptually motivated strategies for shape classification. In *IEEE Conference on Computer Vision and Pattern Recognition*, pages 2289–2296, 2010.

[C4] 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.

Presentations

[P1] *Combining Global Labeling and Local Relabeling for Metallic Image Segmentation.* Graduate Student Day Competition, Second Place. April 8, 2011.

[P2] *Image Registration for Digital Collation.* Graduate Student Day Competition, Honorable Mention. April 2, 2010.

[P3] *Aspect-Oriented Programming.* In CSCE 531. Guest lecture for Dr. Marco Valtorta. March 19, 2008.

[P4] *Math 241.* Vector Calculus. Guest lecture for Dr. Dwayne Brown. April 23—26, 2007.

[P5] *Math 242.* Differential Equations. Guest lecture for Dr. Dwayne Brown. April 23—26, 2007.

Honors/Awards

2011	Graduate Student Day Presentation, Second Place	USC
2010	Graduate Student Day Presentation, Honorable Mention	
2006	Senior Computer Science Award	Bryan College
2004	Clara P. Hammond Award	
	Science and Mathematics Award	USCL
	Highest Academic Average Award	

Teaching

Fall 2011	» CSCE 211	Digital Logic Design	USC
Summer II 2008	» CSCE 102	HTML/CSS/Javasript	
Spring 2008	» CSCE 145 Lab	Java	
Fall 2007	» CSCE 145 Lab	Java	
Spring 2007	» CSCE 204	Visual Basic	USCL
Spring 2007	» Math 241 & Math 242 (Guest Lecture)	Maple	

Skills & Languages

» Assembly	• •	» Java	• • • • •	» Python	• • •
» Bash	• • • •	» Javacript	• • •	» Scheme	• • • • •
» Blender	• • •	» LaTeX	• • •	» SQL	• • •
» C/C++	• • • •	» LISP	•	» Sys. Admin.	• • •
» English	• • • • •	» Maple	• • •	» Visual Basic	• • • • •
» GIT/SVN/CVS	• • • •	» MATLAB	• • • • •	» Wordpress	• • • •
» GNU/Linux	• • • •	» OpenCV	• • • •		
» HTML/CSS	• • • •	» PHP	• • • •		

- • Some familiarity, small-scale projects and assignments
- • • Implementation-specific experience
- • • • Quite familiar, used in limited settings as part of larger projects
- • • • • Extensive knowledge or experience teaching
- • • • • • Used in context of large scale, multi-group projects

Interests and Activities

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