

Zachary Tyas Musgrave

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EDUCATION	Bachelor of Science Computer Science Bachelor of Arts English (Writing and Publication) Clemson University – Calhoun Honors College	Clemson, SC GPA: 3.67/4.00 Spring 2011
	Study Abroad, English Folklore University of Sussex	Brighton, England Summer 2008
HONORS	Upsilon Pi Epsilon , Computer Science academic honor society, 2010 Sigma Tau Delta , English academic honor society, 2010 Calhoun Honors College Conference Travel Fund , full award, 2010 Clemson National Scholars Program , full-tuition academic scholarship, 2007 – present Clemson University Dean's List , 2007 – present Pennsylvania Governor's School , Drexel University, full scholarship, awarded 2006	
PUBLICATIONS	Z. Musgrave, S. Emrich, and D. Thain, Parallelization of a genome annotation pipeline using a master/worker model , <i>The University of Notre Dame Symposium on Undergraduate Research</i> , South Bend, IN (August 2010). Z. Musgrave and R. Pargas, Scheduletastic: Heuristic-based Time Management and Collaboration for Undergraduates , <i>The 2010 ACM Conference on Computer Supported Cooperative Work (CSCW 2010)</i> , Savannah, GA (February 2010).	
RESEARCH	List Processing, Logical Uncertainty, and the Semantic Web Senior Honors Thesis	Clemson, SC Fall 2010 – Present
	<ul style="list-style-type: none">Develop a new approach to pattern matching under Dr. D. E. Stevenson to integrate traditional artificial intelligence programming, fuzzy logic, and Semantic Web protocols	
	Scientific Cloud Computing at the University of Notre Dame NSF Research Experience for Undergraduates (REU)	South Bend, IN Summer 2010
	<ul style="list-style-type: none">Converted a non-parallel bioinformatics pipeline (<i>Maker</i>) into a highly elastic, distributed master-worker system, resulting in a speedup of approximately 33 over 50 nodesCreated complex bioinformatics workflows for the analysis of single nucleotide polymorphism (SNP) in DNA using the tools <i>Work Queue</i> and <i>Makeflow</i>Made these processes executable in the cloud via a novel Web-based interface	
	Online Systems for Pedagogy Creative Inquiry	Clemson, SC Spring 2009
	<ul style="list-style-type: none">Created a Web-based tool, "Scheduletastic", under the guidance of Dr. R. P. Pargas to enhance the academic productivity of students new to university lifeImplemented a custom heuristic algorithm for matching student's study schedules togetherPresented the project as a poster at an ACM conference	
	Research Group Leader, Software/Database Developer Pennsylvania Governor's School	Philadelphia, PA Summer 2006
	<ul style="list-style-type: none">Led a team of seven to develop Web software designed to eliminate prescription drug conflicts and track patients' medical histories	

EMPLOYMENT

General Manager, Computer Engineer

WSBF-FM Clemson

Clemson, SC
May 2009 – Present

- Manage a staff of 80 employees to produce high-quality, relevant programming
- Lead meetings, set long-term goals, and administer a yearly budget of \$80,000
- Write contracts, negotiate with vendors, and oversee daily operations of the entire station
- Ensure 100% continuous uptime of automation systems, Webcasting and FM transmission

Teaching Assistant, Web Design

Duke University Talent Identification Program

College Station, TX
Summer 2009

- Trained gifted high school students at Texas A&M University to plan, design and build novel Web applications using modern, low-level technologies
- Lectured on topics including server scripting, user interface and systems design
- Mentored 25 students as they grew academically and emotionally

Web Applications Programmer

Musgrave Online Systems

Clemson, SC
Spring 2005 – Present

- Develop AJAX-based custom logging software for independent radio
- Design and create an entire suite of professional automation tools to aid in broadcasting
- Customize and integrate software for radio stations across the country
- Maintain and administer several Web presences for small businesses and non-profits

SKILLS

Programming/Markup Languages: C/C++, Visual C#, Python, Lisp, Perl, PHP, Java, JavaScript, Visual Basic, M4, SPARC assembly, OCaml, XHTML, CSS

Specialty Platforms: Condor, MPI, AJAX/jQuery, SQL, TK, Snack, Google Data, XML-RPC

Operating Systems: Windows Server, OS X Server, Unix/Linux, MS-DOS, Solaris

Modern Language: Proficient in Spanish (Castellano)