

Matthew Riley

mriley@gmail.com

http://www.matthewriley.com

300-C E. 33rd St.
Austin, TX 78705
(512) 680-9944

Education	The University of Texas at Austin Pursuing an M.S. in Electrical Engineering (May 2008) Microelectronics & Computer Development Graduate Fellow Advisor: Dr. J.K. Aggarwal GPA: 3.73/4.00 The University of Texas at Austin B.S Electrical Engineering, with Honors GPA: 3.80/4.00	<i>Aug. 2006 - present</i> <i>Aug. 2002 - May 2006</i>
Coursework	Data mining, pattern recognition, machine learning, information theory, information retrieval, computer vision systems, probability & stochastic processes, real analysis	
Publications	J. Lee, M. Ryoo, M. Riley, J.K. Aggarwal, Real-time Detection of Illegally Parked Vehicles using 1-D Transformation. <i>IEEE Conference on Advanced Video and Signal based Surveillance</i> , Sep. 2007	
Work Experience	Research Assistant, Computer & Vision Research Center The University of Texas at Austin <ul style="list-style-type: none">• Performed research concentrated primarily on content-based multimedia retrieval in the context of large-scale distributed systems.• Developed a public, web-based interface to the CIRES image retrieval system. Co-Founder, CollegeVine.com, Austin, TX <ul style="list-style-type: none">• Built a Facebook App to replace the UTLife.com website and provide additional functionality through the Facebook Platform (FBML configuration).• Wrote a custom, Ajax-enabled autocomplete field with FBJS and Prototype.• Wrote all application software in Ruby on Rails with a MySQL database.• Designed all page layouts and graphics, and hand-coded HTML and CSS.• Used Capistrano to automate deployment to an Apache 2.2 / Mongrel web server environment. Intern, Cognitive Video (CoVi) Technologies, Austin, TX <ul style="list-style-type: none">• Developed software for socket-level communication with high-resolution security camera firmware.• Developed a C++ (MFC) Windows application for diagnosing system failures within deployed networks of security cameras.• Integrated existing bug tracking software with a version control system. Intern, Applied Research Laboratories, Austin, TX <ul style="list-style-type: none">• Implemented digital signal processing algorithms for a sonar vertical beamformer using Verilog on the Altera Stratix II FPGA; included FIR filter, downsampling filter, and basebanding implementations.• Researched, implemented and tested a novel transmitter implementation of monopulse-sonar direction-finding methods (ARL-sponsored Senior Design Project, Spring 2005).• Assisted in the development of Matlab tools used for the processing and visualization of experimental synthetic aperture sonar data. Project Manager, BiznizWeb, The Woodlands, TX	<i>Feb. 2007 - present</i> <i>June 2007 - present</i> <i>Jan. 2006 - Aug. 2006</i> <i>June 2004 - Dec. 2006</i> <i>May 2001 - Aug. 2002</i>

Application Developer, BiznizWeb, The Woodlands, TX*May 2000 - May 2001*

- Designed and managed software development for BiznizWeb's DynaBiz software product.
- Reviewed and arbitrated all product development from co-workers and contractors.
- Worked in London, England with partners Touch, plc. and Allied Westminster, assisting with implementation and customization of the completed DynaBiz product.
- Developed an enterprise-level content management system using ColdFusion and MS-SQL as part of the DynaPortal product development team.

Co-Founder, UTLife.com, Austin, TX*July 2002 - Aug. 2005*

- Created a profitable student website for reviewing and browsing the grade histories of professors at UT Austin.
- Attracted over 15,000 students and achieved international press recognition.
- Implemented a used textbook selling system that utilized the Amazon API.
- Wrote web software in ColdFusion with a Microsoft Access database backend.

Academic Projects **CIRES: A Content-based Image Retrieval System***present*<http://cires.matthewriley.com>

Implemented a web-based interface for the CIRES image retrieval algorithm, allowing the user to provide the system with any query image they wish. Based on a query image, CIRES returns visually similar images according to color, texture, and structural image content. Built an extensive image library by utilizing the Flickr API.

A Text-Retrieval Approach to Content-based Audio Retrieval*Spring 2007*

Designed a novel content-based audio retrieval system using established text retrieval methods. The system was able to match the studio recording of a song to live recordings and cover versions of the same song with high accuracy.

Development of a Monopulse Sonar Transmitting Array*Spring 2005*<http://www.matthewriley.com/projects/monopulse>

Designed and implemented a sonar system that employed a novel transmitter-based underwater direction-finding technique based on the well-established receiver-based method known as Monopulse processing.

Video Projection onto an Arbitrary Curved Surface*Spring 2005*<http://www.matthewriley.com/projects/video>

Created a structured-lighting technique for measuring the distortion introduced by an arbitrary curved projection surface. Designed and implemented an algorithm to analyze the measured distortion and modify the projected image prior to projection to remove the distortion.

Honors & Awards

University of Texas MCD Graduate Fellowship (06-08)
University of Texas College of Engineering Graduate Fellowship (06)
Rams Horn Award (Best Class Project) "Video Projection onto a Curved Surface"
College Scholar, College of Engineering (Spring 04-06)

Skill Summary

High-Level Languages MATLAB, C++, Ruby, Java, C#, C

Low-Level Languages Verilog, Motorola 6812, TI TMS320C6000 VLIW DSP

Web Technologies Ruby on Rails, JavaEE, Hibernate, ASP.NET, ColdFusion, Apache, MySQL, Capistrano, Mongrel

Development Tools Microsoft Visual Studio 2005, Visual Studio 6, IntelliJ IDEA, Eclipse, Subversion, FogBugz, Ethereal