Todd Goodall

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Education

M.S.E., Electrical and Computer Engineering Major GPA - 4.0/4.0
University of Texas at Austin August 2012 - December 2014

B.S., Computer Engineering GPA - 3.8/4.0
Clemson University May 2012

Work Experience

University of Texas at Austin September 2013 - May 2015, September 2015 - Present
Graduate Research Assistant
- Finding applications for Natural Scene Statistics in mutliple imaging modalities
- Developing video quality assessment algorithms and demonstrations

Netflix May 2015 - August 2015
Graduate Intern/Contractor
- Applied video quality algorithms to real-world film content
- Developing video quality assessment algorithms and demonstrations
- Improved performance of in-house algorithms

Applied Research Labs May 2012 - August 2013
Graduate Research Assistant/University Affiliate
- Researched compression schemes for reducing data loads
- Adapted perceptual quality assessment to SONAR images

Clemson University Summer 2011
Undergraduate Researcher
- Optimized face recognition algorithms for GPGPU hardware using CUDA

Itron, Inc. May 2009 - Aug 2009, Jan 2010 - May 2011
R&D Intern
- Developed indispensable power meter tracking website
- Interfaced smart meter data with google earth, improving efficiency

Exhedra Solutions, Inc. January 2011 - May 2012
Freelance Programmer
- Developed web backends for various clients
- Acquired valuable web-based programming skills

Research Experience

Texas Advanced Computing Center (TACC) August 2014 - Present
Tasks related to statistics of natural video and VQA
The project aims to blindly evaluate quality of video from the Blanton Museum of Art created with artistic intent.

University of Texas at Austin January 2013 - Present
Tasks related to statistics of IR images
The project aims to blindly evaluate image quality of infrared images to assist quality dependent tasks.

University of Texas at Austin May 2014 - Present
Developing blind VQA algorithms
The project aims to blindly evaluate quality of videos by evaluating their natural scene statistics.

Applied Research Labs May 2012 - August 2013
Compression of sonar acoustic data
The project aims to develop an online compression algorithm to provide lossy compression of high-bandwidth multi-channel data.

University of Texas at Austin February 2013 - August 2013
Automatic computation of 3D face symmetry
The project aims to efficiently find the line of symmetry of a 3D face model to aid in the facial recognition task.

Clemson University May 2011 - June 2012
Hardware parallelization of the facial recognition task
The project aims to rewrite common facial recognition algorithms to utilize the performance of a GPGPU to provide an ensemble for robust recognition.

Technical Skills

Operating System:	Arch Linux, RHEL, Fedora, Windows 7
High level language:	Python 2.7, C++, C, C#, CUDA, OpenCL, R, Matlab, OCAML, SQL, HTML/CSS, PHP, JQuery, Javascript
Hardware description language:	VHDL, Verilog
Embedded:	PIC, AVR, ARM
Tool:	git, mercurial, Scikit-learn, Scikit-image, numpy, scipy, tmux, vim, ssh, sftp, rsync, imagemagick, OpenCV, Caffe, PCL
Typography:	LaTeX, Microsoft Office

Honors

- Engineering Foundation Endowed Graduate Presidential Scholarship 2015-2016
- NDIA UWD Academic Fellowship 2012-2013
- Dean's Honor List during 7 semesters, and President's List last semester at Clemson University
- Tau Beta Pi Honors Engineering Society, since 2009
- Palmetto Fellows Scholarship 2007-2012

Publications

D. Ghadiyaram, T. Goodall, L. K. Choi, and A. C. Bovik. Perceptual Image and Video Quality. Encyclopedia of Image Processing. Taylor & Francis, to appear 2016.

L. K. Choi, T. Goodall, D. Ghadiyaram, and A. C. Bovik. Perceptual Image Enhancement. Encyclopedia of Image Processing. Taylor & Francis, to appear 2016.

T. Goodall, A. C. Bovik, N. G. Paulter, and H. Vikalo, Non-uniformity Correction of IR Images using Natural Scene Statistics. *IEEE Global Conference on Signal and Information Processing* December 2015

T. Goodall, A. C. Bovik, and N. G. Paulter, Tasking on Natural Statistics of Infrared Images. *IEEE Transactions on Image Processing* October 2015

M. Esteva, A. Bowen, T. Goodall, A. C. Bovik, and Z. B. Abel, Evaluation of Non-Reference Quality Assessment Algorithms to Curate Born-Digital Video Collections. *IS&T Archiving Conference* May 2015

J. Jendzurski, N. G. Paulter, F. Amon, E. Jacobs, A. C. Bovik, and T. Goodall. Image Quality Testing: Selection of Images for Assessing Test Subject Input Proceedings of the 8th International Conference on Sensing Technology Liverpool, UK 2014.

T. Goodall and A. C. Bovik. No-Reference Task Performance Prediction on Distorted LWIR Images *2014*

Southwest Symposium on Image Analysis and Interpretation San Diego, CA 2014

T. Goodall, S. Gibson, and M. C. Smith. Parallelizing Principal Component Analysis for Robust Facial Recognition Using CUDA *Symposium on Application Accelerators in High-Performance Computing* Chicago, IL 2012

Patents

J. [Jason] Joachim, J. [Jeremy] Joachim, M. Glombicki, S. Bernstein, and T. Goodall. System and Method for Digitally Scanning an Object in Three Dimensions. U.S. Patent Application 05660001, filed 2015. Patent Pending.