

Todd Goodall

☎ (512) 905-2879
✉ tgoodall@utexas.edu

<http://www.linkedin.com/in/toddgoodall>
<http://www.toddgoodall.com>

Education

PhD, Electrical and Computer Engineering

University of Texas at Austin

- Academic Track: Communication Networks and Systems.
- Advisor: Professor Alan C. Bovik.

Overall GPA - 3.84/4.0
August 2012 - May 2018

M.S.E., Electrical and Computer Engineering

University of Texas at Austin

Major GPA - 4.0/4.0
Aug 2012 - Dec 2014

B.S., Computer Engineering

Clemson University

GPA - 3.8/4.0
Aug 2007 - May 2012

Work Experience

University of Texas at Austin

Graduate Research Assistant

- Finding applications for Natural Scene Statistics in multiple imaging modalities.
- Developing video quality assessment algorithms and demonstrations.
- Automated source inspection of videos to detect artifacts.

Sep 2013 - May 2018

Oculus Research

PhD Intern

- Worked with perception science team to advance vision science research.

May 2017 - Aug 2017

Netflix

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.
- New highly accurate algorithms for video source inspection.

May 2015 - Aug 2015, May 2016 - Aug 2016

Cargo Spectre LLC

Co-Founder and Vision Systems Specialist

- Developed vision algorithms for automatically dimensioning warehouse cargo.
- Ongoing work involves improving dimensioning accuracy and speed.

May 2014 - Present

Applied Research Labs

Graduate Research Assistant/University Affiliate

- Researched compression schemes for reducing data loads.
- Adapted perceptual quality assessment to SONAR images.

May 2012 - Aug 2013

Clemson University

Undergraduate Researcher

- Optimized face recognition algorithms for GPGPU hardware using CUDA.

May 2011 - Aug 2011

Itron, Inc.

R&D Intern

- Developed indispensable power meter tracking website.
- Interfaced smart meter data with google earth, improving efficiency.

May 2009 - Aug 2009, Jan 2010 - May 2011

Ongoing Projects

Github

December 2015 - Present

Scikit-Video: Video Processing in Python

The project aims to provide low-level access to FFmpeg for reading/writing videos while also providing easy access to state-of-the-art quality algorithms – all from Python.

University of Texas at Austin with Netflix

May 2014 - May 2018

Developing video source inspection algorithms

The project aims to develop accurate detectors of various video source artifacts including but not limited to upscaling, combing, and false contouring artifacts.

Texas Advanced Computing Center (TACC)

August 2014 - May 2018

Tasks related to statistics of natural video and VQA

The project aims to assist curators in assessing the quality of large video collections.

University of Texas at Austin

May 2014 - May 2018

Developing blind VQA algorithms

The project aims to improve video quality prediction performance by improving existing natural scene statistic based models.

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

Publications

T. Goodall and A. C. Bovik. Detecting and Mapping Video Impairments. *Transactions on Image Processing*. submitted 2018

T. Goodall and A. C. Bovik. Artifact Detection Maps Learned using Shallow Convolutional Networks. *Southwest Symposium on Image Analysis and Interpretation*. 2018

T. Goodall and A. C. Bovik. Detecting Source Artifacts with Supervised Sparse Filters. *Picture Coding Symposium*. 2018

T. Goodall, Maria Esteva, Sandra Sweat, and A. C. Bovik. Towards Automated Quality Curation of Video Collections from a Realistic Perspective. *IEEE Conference on Big Data*. 2017

A. C. Bovik, C. Bampis, and T. Goodall. Perceptual Issues of Streaming Video. *Society for Information Display*. 2017

C. Bampis, T. Goodall, and A. C. Bovik. Sampled Efficient Full-Reference Image Quality Assessment Mod-

els. *Asilomar Conference on Signals, Systems, and Computers*. 2016

T. Goodall, I. Katsavounidis, Z. Li, A. Aaron, and A. C. Bovik. Blind Picture Upscaling Ratio Prediction. *IEEE Signal Processing Letters*. 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*. 2015

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

US 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. Awarded 2018.

T. Goodall and A. Bovik. Distinguishing Between Infrared Images and Videos and Visible Light Images and Videos Using Only Image Pixel-Level Data. Submitted 2015.

T. Goodall and A. Bovik. Measurement of Additive Non-Uniformity Noise Produced in Infrared Images or Videos. Submitted 2015.