John Gideon

1606 Chelsea Circle, Howell, Michigan 48843   JohnGideon.me

(513)702-0781   gideonjn@gmail.com

Education

Ph.D. Candidate, Computer Science and Engineering, University of Michigan, in progress

M.S. Computer Engineering, University of Cincinnati, August 2013

B.S. Electrical Engineering, University of Cincinnati, April 2013, *Magna Cum Laude*

Minor Mathematics, University of Cincinnati, April 2013

Research Experience

Computational Human-Centered Analysis and Integration Lab   Fall 2013 – present

University of Michigan   *Ann Arbor, Michigan*

Investigating the automatic detection of emotion and mood from speech for the improvement of medical care with Professor Emily Mower Provost. Researcher on the PRIORI project, which aims to use mobile phone calls from individuals with bipolar disorder to determine when they are symptomatic. Exploring methods to improve emotion and mood classification by reducing the contribution of other acoustic factors including device characteristics, dataset differences, and subject demographics. Employing a variety of techniques including deep learning, clinically directed feature creation, and signal processing to create working systems.

Virtualized Beowulf Clusters with Low Latency Messaging   Fall 2012 – Summer 2013

University of Cincinnati   *Cincinnati, Ohio*

Showed a custom virtualized operating system with much lower native network latency. Designed and implemented llamaMPI – a combination of the Message Passing Interface (MPI) and llamaOS, a custom low-latency operating system. This allowed for integration of already existing applications with a speedup of up to 70%. The final result was tested with the NAS Parallel Benchmarks and the WARPED parallel discrete event simulator.

Environment Tracking and Augmentation Senior Project   Fall 2011 – Spring 2012

University of Cincinnati   *Cincinnati, Ohio*

Constructed a model of various housing interior rooms using an online custom tracking algorithm employing the Kinect device. The models were then augmented in real time on the normal video display with various informative computer graphics.

Publications

John Gideon, Melvin McInnis, and Emily Mower Provost. "Barking up the Right Tree: Improving Cross-Corpus Speech Emotion Recognition with Adversarial Discriminative Domain Generalization (ADDoG)." IEEE Transactions on Affective Computing. 2018. (*under review*)

Soheil Khorram, Mimansa Jaiswal, **John Gideon**, Melvin McInnis, Emily Mower Provost. "The PRIORI Emotion Dataset: Linking Mood to Emotion Detected In-the-Wild." *INTERSPEECH*. 2018. (*oral presentation*)

John Gideon, Simon Stent, Luke Fletcher. "A Multi-Camera Deep Neural Network for Detecting Elevated Alertness in Drivers." *ICASSP*. 2018. (*poster presentation*)

John Gideon, Soheil Khorram, Zakaria Aldeneh, Dimitrios Dimitriadis, and Emily Mower Provost. "Progressive Neural Networks for Transfer Learning in Emotion Recognition." *INTERSPEECH*. 2017. (*oral presentation*)

John Gideon, Biqiao Zhang, Zakaria Aldeneh, Yelin Kim, Soheil Khorram, Duc Le, and Emily Mower Provost. "Wild Wild Emotion: A Multimodal Ensemble Approach." *ICMI*. *EmotiW Challenge*. 2016. (*oral presentation and poster*)

Soheil Khorram, **John Gideon**, Melvin McInnis, and Emily Mower Provost. "Recognition of Depression in Bipolar Disorder: Leveraging Cohort and Person-Specific Knowledge." *INTERSPEECH*. 2016. (*oral presentation*)

John Gideon, Emily Mower Provost, and Melvin McInnis. "Mood State Prediction from Speech of Varying Acoustic Quality for Individuals with Bipolar Disorder." *ICASSP*. Shanghai, China. March, 2016. (*oral presentation*)

John Gideon. "The Integration of Llamaos for Fine-Grained Parallel Simulation." University of Cincinnati. OhioLINK Electronic Theses and Dissertations Center. 2013. (*thesis*)

Professional Experience

Intern Research Scientist   June 2017 – September 2017
Toyota Research Institute   *Cambridge, Massachusetts*
Investigated the automatic detection of surprise in drivers. Collected a dataset of people reacting to dashcam footage of crashes. Sensors included three cameras, a microphone, gaze tracking glasses, and steering wheel and pedal input. Developed a novel multi-view neural network for surprise detection.

Graduate Student Instructor   September 2013 – April 2014
University of Michigan   *Ann Arbor, Michigan*
Supported the teaching of the introductory algorithms and data structures course with mainly sophomore level students. Led discussion and lab section, for which he prepared his own presentations. Mentored students during office hours, allowing for more directed advice.

Engineering Researcher   April 2013 – August 2013
University of Cincinnati Simulation Center   *Cincinnati, Ohio*
Performed research and improved key software as a contractor to Procter and Gamble. Revamped existing R scripts to run simulations orders of magnitude faster. Completed extensive analysis of a new image processing algorithm in MATLAB.

Engineering Co-op (5 quarters and part time)   January 2010 – December 2012
General Electric Aviation   *Cincinnati, Ohio*
Conducted research and development on a new embedded testing system. Utilized state of the art multicore digital signal processing and FPGA technologies. Used formal development processes including coding standards and version control. Reduced testing costs and increased data accuracy versus previous system.

Honors and Awards

NSF Student Travel Grant (2016)

Graduated Honors Program, University of Cincinnati (2013)

Mantei/Mae Academic Achievement Award (2012 and 2013)

Dean's List all semesters, University of Cincinnati (2008-2013)

University of Cincinnati Distinguished Honors Scholar

University of Cincinnati Cooperative Education and Practice Participant

Eagle Scout medal with Bronze Palm, Boy Scouts of America (2007)

Membership

Member, Eta Kappa Nu, Electrical Engineering Honor Society (2011 – present)

Member, Tau Beta Pi, Engineering Honor Society (2012 – present)

Member, IEEE (2008 – present)

President, GradTONES (2013 – 2017)

Vice President, University of Cincinnati Choruses (2008 – 2013)

Relevant Coursework

Graduate: Machine Learning, Advanced Artificial Intelligence, Complex Systems and Networks, Parallel Programming (thesis), Health Informatics

Undergraduate: Intelligent Systems, Digital Image Processing, Software Engineering, Signals and Systems, Operating Systems

Technical Skills

Programming languages:

Most experienced with C++, Python, and MATLAB

Some experience with Perl, Bash, Java, C, and C#

Dabbled in Verilog, VHDL, R, and Ada

Deep Learning: PyTorch and Keras

Operating Systems: Linux and Windows

Version Control Systems: Git and Subversion