John Gideon

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Professional Experience

Research Scientist September 2019 – present
Toyota Research Institute *Full Time Remote Work*
Performed research into driver-facing technologies for safety, including self-supervised gaze estimation and remote heart rate estimation from video. Enabled autonomous vehicle development through simulation scenario design and implementation.

Graduate Student Research Assistant September 2013 – August 2019
University of Michigan *Ann Arbor, Michigan*
Investigated emotion and mood detection from cell-phone speech for the improvement of medical care. Worked on app development, database design, signal processing, clinical feature development, and machine learning. Explored methods to improve classification by reducing the contribution of other acoustic factors including dataset and subject differences.

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 and developed a novel multi-view neural network for surprise detection.

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.

Engineering Co-op (5 quarters and part time) January 2010 – December 2012
General Electric Aviation *Cincinnati, Ohio*
Conducted research and development utilizing state of the art multicore digital signal processing and FPGA technologies. Reduced testing costs and increased data accuracy versus the previous system.

Education

Ph.D. Computer Science and Engineering, University of Michigan, December 2019
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

Selected Publications

John Gideon, Shan Su, and Simon Stent. “Unsupervised Multi-View Gaze Representation Learning.” *CVPR Workshop on Gaze Estimation and Prediction in the Wild*. 2022. (*accepted*)

John Gideon and Simon Stent. “Estimating Heart Rate from Unlabelled Video.” *ICCV Vision for Vitals Workshop and Challenge*. 2021. (***first place***, *oral presentation*) – View

John Gideon* and Simon Stent*. “The Way to my Heart is through Contrastive Learning: Remote Photoplethysmography from Unlabelled Video.” *ICCV*. 2021. (*poster*) – View

Zhijian Liu, Simon Stent, Jie Li, **John Gideon**, and Song Han. “LocTex: Learning Data-Efficient Visual Representations from Localized Textual Supervision.” *ICCV*. 2021. (*poster presentation*) – View

John Gideon, Melvin McInnis, and Emily Mower Provost. “Improving Cross-Corpus Speech Emotion Recognition with Adversarial Discriminative Domain Generalization (ADDoG).” *IEEE Transactions on Affective Computing*. 2019. (*accepted*) – View

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

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*) – View

Technical Skills

Languages:

Most experienced with Python, C++, C#, and MATLAB

Some experience with Bash, Java, SQL, and C

Dabbled in JavaScript, Verilog, VHDL, R, and Perl

Deep Learning: PyTorch and some previous experience with Keras

Operating Systems: Linux and Windows

Other: Git, Unity, Unreal, OpenCV

Honors and Awards

Next Level Leadership Program - Mastering the Innovation Mindset (2021-2022)

First place entry in the 2021 ICCV Vision for Vitals Workshop and Challenge

Richard and Eleanor Towner Prize for Outstanding Research, Honorable Mention (2018)

NSF Student Travel Grant (2016)

Graduated Honors Program, University of Cincinnati (2013)

Mantei/Mae Academic Achievement Award (2012 and 2013)

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