

Benton Girdler

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RESEARCH INTERESTS

Brain Modeling, Brain Computer Interfaces, Machine Learning (and Applications of Differential Geometry to Both)

EDUCATION

University of Kentucky - Mathematics B.S/Computer Science minor, Jan. 2017 - May 2020
3.77 Cumulative GPA, 4.0 Major/Minor GPA

School of the Art Institute of Chicago — Sept. 2015 - May 2016

PUBLICATIONS/MANUSCRIPTS

Research Proposal

Benton Girdler, "Generating a Differentiable Loss from Error Related Potentials Using Similarity Measures of Neural Signals". *NSF Graduate Research Fellowship Program*, Oct. 2020

Journal

Benton Girdler, Dr. Jihye Bae, Dr. Myeong Sang Yu, "Feasibility of a deep learning-based automated detection and classification algorithm for nasal polyp and inverted papilloma on nasal endoscopic images". *JAMA Oncology* (under review), Nov. 2020

Contribution: Medical Image Analysis, Application of Convolutional Neural Network and Automatic Visual Explanations, Manuscript Writing

Abstract

Benton Girdler, Dr. Jihye Bae, "Quickly Adapting Reinforcement Learning Brain Machine Interfaces Using Model Agnostic Meta Learning". *University of Kentucky's Electrical and Computer Engineering Research Symposium*, Apr. 2020

Contribution: Integration of Model Agnostic Meta Learning using Reinforcement Learning in EEG-based Brain Machine Interfaces.

AWARDS AND HONORS

J.C Eaves Undergraduate Assistant Scholarship, Jan. 2019 - May 2019

J.C Eaves Summer Research Scholarship, June 2018 - Aug. 2018

Supervisor: Dr. Yuan Zhou, Mathematics, University of Kentucky
Research Topic: Computing properties of polytopes.

PROFESSIONAL EXPERIENCE

Research Assistant, Mar. 2020 - Present

Neural Interfaces and Signal Processing (NISP) Lab, Electrical and Computer Engineering, University of Kentucky.

Supervisor: Dr. Jihye Bae

Research Topic: Brain Computer Interfaces, Riemannian Geometry for BCIs, RL

Undergraduate Teaching Assistant, Jan. 2019 - May 2019 Math department, University of Kentucky.

Course: Intro To Optimization

Duty: Grading Exams, In-Class Assistance

Undergraduate Assistant, Jan 2018 - Dec 2018 Student Support Services, University of Kentucky.

Duty: University Calculus Tutoring

EXTRA

Math Club, Volunteer for the Neuro-Engineering Workshop with EEG-focused Brainstorm Training 2020

SKILLS

Python (pytorch, keras, tensorflow), <https://github.com/TreeLimes>, C, C++, MATLAB