

OLAWALE SALAUDEEN

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EDUCATION

University of Illinois at Urbana-Champaign

August 2019 - Present

Ph.D. Candidate

Department of Computer Science

Advisor: Sanmi Koyejo

Texas A&M University

August 2015 - May 2019

Bachelor of Science with Honors, Mechanical Engineering

Minors in Computer Science and Mathematics

RESEARCH INTERESTS

Deep Learning, Transfer Learning (Domain Adaptation/Generalization), Causal Inference/Discovery, Causality-Inspired Machine Learning, Probabilistic Graphical Models

PUBLICATIONS

Workshop Papers

1. **Olawale Salaudeen, Oluwasanmi Koyejo. Exploiting Causal Chains for Domain Generalization**

Conference on Neural Information Processing Systems (NeurIPS), 2021. Workshop on Distribution Shifts – Connecting Methods and Applications

Abstracts

1. Brad Sutton, Aaron Anderson, Benjamin Zimmerman, Paul Camacho, Riwei Jin, Charles Marchini, **Olawale Salaudeen**, Natalie Ramsy, Davide Boido, Serge Charpak, Andrew Webb, Luisa Ciobanu . **Ultra-fast 3D fMRI to explore cardiac-induced fluctuations in BOLD-based functional imaging**

International Society for Magnetic Resonance in Medicine (ISMRM), 2022 (abstract)

RESEARCH EXPERIENCE

University of Illinois at Urbana-Champaign

September 2021 - Present

Miniature Brain Machinery NSF Trainee with Prof. Sanmi Koyejo and Prof. Brad Sutton – Champaign, Illinois

- An NSF-funded research traineeship that combines cognitive and behavior studies with brain cell and tissue biology
- Developing machine learning algorithms to detect and remove nuisance artifacts, such as the effects of breathing, from fMRI scans

University of Illinois at Urbana-Champaign

August 2020 - August 2021

Beckman Institute Graduate Research Fellow with Prof. Sanmi Koyejo, Prof. Brad Sutton, and Prof. Aron Barbey – Champaign, Illinois

- Developed a causal structure learning framework to isolate and remove motion artifacts in functional Magnetic Resonance Images (fMRI)

University of Illinois at Urbana-Champaign

August 2019 - Present

Graduate Research Assistant with Prof. Sanmi Koyejo and Prof. Aron Barbey – Champaign, Illinois

- Developed a learning framework for estimating multi-modal individual treatment effects, correlated changes, and counterfactuals in the context of human performance optimization

Texas A&M University Multi-Robot Laboratory

October 2018 - May 2019

Undergraduate Researcher with Prof. Dylan Shell – College Station, TX

- Created and analyzed a novel geometry-based motion planning algorithm for tethered robots

Texas A&M University Energy Systems Laboratory

August 2016 - October 2018

Undergraduate Researcher with Prof. Charles Culp – College Station, TX

- Developed probabilistic algorithms for fault detection and diagnosis in industrial Heating Ventilation and Air Condition systems

INTERNSHIPS

Google

May 2022 - Present

Student Researcher - Cambridge, MA

Sandia National Laboratories

May 2017 - April 2022

Year-Round R&D Intern - Albuquerque, NM

2021. Developed a deep set predictor with configurable mean and pairwise errors (Type I/II) for multiclass prediction in the context of contraband detection in images

2020. Working on a team to develop models to classify organic materials in X-ray images

2020. Designed and executed experiments to investigate the effectiveness of Reinforcement Learning in sequence to sequence generation – Deep Q Network in the context of automated code generation

2019. Implemented a rationale generating Recurrent Convolutional Neural Network model for triage classification of triggered network security alerts

2019. Prototyped a Convolutional Neural Network framework for semantic segmentation of X-Ray images of Improvised Explosive Devices and generation of a graphical model of designs of the devices

2018. Developed and implemented a multi-modal deep Recurrent Neural Network framework for classifying safety rules for maintenance tasks from mixed numerical and textual tasks descriptions

2018. Extended a 2D Simultaneous Localization and Mapping (SLAM) algorithm for ground systems to 3D for air systems equipped with 3D-LIDAR, IMU/GPS

2017. Designed and prototyped an intrusion detection and localization system using fiber-optic disturbances

2017. Researched and presented applications of big data analysis to learn physical properties of a configuration space based on electromagnetic disturbances in transmitted wireless signals

INVITED TALKS

1. Denoising via probabilistic graphical model augmentation of ICA-AROMA

University of Illinois at Urbana-Champaign Beckman Institute Graduate Student Seminar

SERVICE

Reviewing

International Conference on Machine Learning (ICML)

2022

NeurIPS Black In AI (BAI) Workshop	2021
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University of Illinois at Urbana-Champaign

Graduate Study Committee, 1 of 2 Graduate Student Members	2022
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Broadening Participation in Computing, Engagement Subcommittee Member	2021 - Present
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Graduates Engineers Diversifying Illinois, Mentor	2020 - Present
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Institute for Inclusion, Diversity, Equity, and Access (IDEA), Affiliate Member	2020 - Present
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Mentorship

Distributed Research Experiences for Undergraduates (DREU)	2021
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HONORS AND AWARDS

NSF Miniature Brain Machinery Research Trainee <i>University of Illinois at Urbana-Champaign</i>	2021
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GEM Associate Fellow <i>University of Illinois at Urbana-Champaign</i>	2021
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Beckman Institute Graduate Fellow <i>University of Illinois at Urbana-Champaign</i>	2020
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Sloan Scholar <i>Alfred P. Sloan Foundation's Minority Ph.D. (MPHD) Program</i>	2019
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Masters Fellowship Program (declined) <i>Sandia National Laboratories</i>	2019
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Mechanical Engineering Advisory Council Scholarship <i>Texas A&M University</i>	2018
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Foundation Excellence Award <i>Texas A&M University</i>	2017
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Pi Tau Sigma, Sigma Delta <i>National Mechanical Engineering Honors Society</i>	2016
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Craig and Galen Brown Honors College of Engineering <i>Texas A&M University</i>	2015
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Regents Scholar Program <i>Texas A&M University</i>	2015
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