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 (To Appear)

RESEARCH EXPERIENCE

University of Illinois at Urbana-Champaign September 2021 - Present
Miniature Brain Machinery NSF Trainee – 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 brain scans

University of Illinois at Urbana-Champaign August 2020 - August 2021
Beckman Institute Graduate Research Fellow – 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 – 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-Robotic Laboratory October 2018 - May 2019
Undergraduate Researcher under Professor 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 under Professor Charles Culp – College Station, TX

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

PROFESSIONAL EXPERIENCE

Sandia National Laboratories May 2017 - Present
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

SKILLS

Programming: C/C++/C#, Python, Matlab, Javascript, Bash, with practical experiences.
Language: English (native), Yoruba (native), Spanish (conversational)
Misc: Solidworks (CAD)

SERVICE

Reviewing

- International Conference on Machine Learning (ICML): 2022
- NeurIPS Black In AI (BAI) Workshop: 2021

University of Illinois at Urbana-Champaign

- **2022-.** Department of Computer Science - Graduate Study Committee, 1 of 2 Graduate Student Members
- **2021-.** Department of Computer Science - Broadening Participation in Computing, Engagement Subcommittee Member
- **2020-.** UIUC Graduates Engineers Diversifying Illinois, mentor upperclassmen undergraduate students in goal setting, career planning, and academic development
- **2020-.** UIUC Institute for Inclusion, Diversity, Equity, and Access (IDEA), Affiliate Member

Other

- **2017-2019** HMTech, mentored underrepresented High School students interested in STEM
- **2016-.** Pi Tau Sigma, Sigma Delta (National Mechanical Engineering Honors Society), External VP
- **2015-2019** Craig and Galen Brown Honors College of Engineering, Student Executive Committee Chair
- **2015-2019** Regents Scholar Program, mentored first generation college students in Engineering

HONORS AND AWARDS

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