BIOGRAPHICAL SKETCH

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NAME: Alamudun, Folami

eRA COMMONS USER NAME (credential, e.g., agency login): folami_alamudun

POSITION TITLE: Research Scientist

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE (if applicable)	END DATE MM/YYYY	FIELD OF STUDY
University of Texas, El Paso, Texas	BS	05/2004	Electrical & Computer Engineering
Texas A&M University, Computer Science & Engineering, College Station, TX	Ph.D.	05/2016	Computer Science & Engineering

A. Personal Statement

My work is focused on applied artificial intelligence for acquisition, synthesis and understanding of biomedical data. Previous and ongoing research involved developing efficient machine learning algorithms for feature extraction and classification of electronic health data including whole slide images, MRI, and pathology reports. Previous projects also involved developing an efficient, configurable privacy preserving framework to minimize risks associated with single or joint computing on sensitive or restricted data.

As a researcher at a US Department of Energy National Laboratory, I have experience collaborating with healthcare professionals, in industry, government, and academia, to deliver efficient computing solutions to practical challenges involving both image and text forms of electronic health records. These experiences include as an individual contributor, in full stack development and deployment of deep learning solutions, and as part of a multi-institution team.

The proposed work applies machine learning for processing, and analysis of 3D medical images. Having a breadth of experience in applied machine learning with multiple imaging modalities and scientific software development, I will engage in developing deep learning algorithms for feature extraction and medical image processing for the proposed project.

1. Kotevska O, Alamudun F, Stanley C. Optimal Balance of Privacy and Utility with Differential Privacy Deep Learning Frameworks. 2021 International Conference on Computational Science and Computational Intelligence (CSCI). 2021 International Conference on Computational Science and Computational Intelligence (CSCI); ; Las Vegas, NV, USA. IEEE; c2021. Available from: https://ieeexplore.ieee.org/document/9799176/ DOI: 10.1109/CSCI54926.2021.00141
2. Alawad Mohammed (ORCID:0000000274910440);, Gao Shang ;, Alamudun Folami T. (ORCID:0000000208034542);, Wu Xiao-Cheng ;, Durbin Eric B. ;, Doherty Jennifer ;, Stroup Antoinette ;, Coyle Linda ;, Penberthy Lynne ;, Tourassi Georgia (ORCID:0000000294189638). Multimodal Data Representation with Deep Learning for Extracting Cancer Characteristics from Clinical Text. ; c2020. Available from: https://www.osti.gov/biblio/1737476-multimodal-data-representation-deep-learning-extracting-cancer-characteristics-from-clinical-text other-id: 1737476
3. Savova GK, Danciu I, Alamudun F, Miller T, Lin C, Bitterman DS, Tourassi G, Warner JL. Use of Natural Language Processing to Extract Clinical Cancer Phenotypes from Electronic Medical Records. Cancer Res. 2019 Nov 1;79(21):5463-5470. PubMed Central PMCID: PMC7227798.
4. Alamudun F, Yoon HJ, Hudson KB, Morin-Ducote G, Hammond T, Tourassi GD. Fractal analysis of visual search activity for mass detection during mammographic screening. Med Phys. 2017 Mar;44(3):832-846. PubMed PMID: 28079249.

B. Positions, Scientific Appointments and Honors

Positions and Scientific Appointments

2018 -	Research Scientist, Oak Ridge National Laboratory, Oak Ridge, TN
2016 - 2018	Postdoctoral Research Associate, Oak Ridge National Laboratory, Oak Ridge, TN
2005 - 2009	Enterprise Software Systems Integration consultant, Accenture, Irving, TX

C. Contribution to Science

1. My research is focused on bridging the gap in human-machine interaction as increasing machine intelligence transform tools into cooperative collaborators. I develop novel feature extraction and machine learning algorithms for bio-sensing, computer vision, and natural language processing. These contributions to applied artificial intelligence provide computing methods to enable intelligent machines to better understand human behavior and performance.

    a. Savova GK, Danciu I, Alamudun F, Miller T, Lin C, Bitterman DS, Tourassi G, Warner JL. Use of Natural Language Processing to Extract Clinical Cancer Phenotypes from Electronic Medical Records. Cancer Res. 2019 Nov 1;79(21):5463-5470. PubMed Central PMCID: PMC7227798.

    b. Alamudun F, Paulus P, Yoon HJ, Tourassi G. Modeling sequential context effects in diagnostic interpretation of screening mammograms. J Med Imaging (Bellingham). 2018 Jul;5(3):031408. PubMed Central PMCID: PMC5858736.

    c. Alamudun F, Yoon HJ, Hudson KB, Morin-Ducote G, Hammond T, Tourassi GD. Fractal analysis of visual search activity for mass detection during mammographic screening. Med Phys. 2017 Mar;44(3):832-846. PubMed PMID: 28079249.

    d. Alamudun F, Choi J, Khan H, Ahmed B, Gutierrez-Osuna R. Removal of Subject-Dependent and Activity-Dependent Variation in Physiological Measures of Stress. Proceedings of the 6th International Conference on Pervasive Computing Technologies for Healthcare. 6th International Conference on Pervasive Computing Technologies for Healthcare; ; San Diego, United States. IEEE; c2012. Available from: http://eudl.eu/doi/10.4108/icst.pervasivehealth.2012.248722 DOI: 10.4108/icst.pervasivehealth.2012.248722