Education

2014–Present **PhD in Electrical Engineering** , *University of Texas at Dallas*, Richardson, TX, United States.

2011–2012 **Master of Science in Engineering in Control Systems**, *The University of Sheffield*, UK.

2000–2005 **Bachelor Of Science in Physics & Electronics**, *Adekunle Ajasin University*, Akungba, Nigeria.

Publications

Olalekan Ogunmolu, Azar Sadeghnejad Barkousaraie, Dan Nguyen, Nicholas Gans, and Steve Jiang. A Monte Carlo Tree Game for Beam Orientation Optimization. To appear in *International Conference on Monte Carlo Techniques for Medical Applications II* (*MCMA*), Montreal, CA. June 2019.

Azar Sadeghnejad Barkousaraie, **Olalekan Ogunmolu**, Steve Jiang, and Dan Nguyen. Deep Learning Neural Network for Beam Orientation Optimization. To appear in *International Conference on the use of Computers in Radiation Therapy XVI* (*ICCR*), Montreal, CA. June 2019.

Olalekan Ogunmolu, Michael Folkerts, Dan Nguyen, Nicholas Gans, and Steve Jiang. Deep BOO: Automating Beam Orientation Selection in Intensity Modulated Radiation Therapy. To appear at *Algorithmic Foundations of Robotics XIII, International Workshop* (*WAFR*), Mérida, Mexico. December 2018.

Olalekan Ogunmolu, Nicholas Gans, and Tyler Summers. Minimax Iterative Dynamic Game: Application to Nonlinear Robot Control Tasks. *IEEE/RSJ International Conference on Intelligent Robots and Systems* (*IROS*), Madrid, Spain. October 2018. DOI: 10.1109/IROS.2018.8594037

Olalekan Ogunmolu, Dan Nguyen, Xun Jia, Weiguo Lu, Nick Gans, and Steve Jiang. Automating Beam Orientation Optimization for IMRT Treatment Planning: A Deep Reinforcement Learning Approach.

Yara Almubarak, Joshi Aniket, **Olalekan Ogunmolu**, Xuejun Gu, Steve Jiang, Nicholas Gans, and Yonas Tadesse, Design and Development of Soft Robots for Head and Neck Cancer Radiotherapy. *SPIE: Smart Structures + Nondestructive Evaluation*, Denver, CO, U.S.A. March 2018.

Olalekan Ogunmolu, Adwait Kulkarn, Yonas Tadesse, Xuejun Gu, Steve Jiang, and Nick Gans. Soft-NeuroAdapt: A 3-DOF Neuro-Adaptive Pose Correction System For Frameless and Maskless Cancer Radiotherapy. *IEEE/RSJ International Conference on Intelligent Robots and Systems* (*IROS*), Vancouver, BC, Canada. September 2017. DOI: 10.1109/IROS.2017.8206211.

Olalekan Ogunmolu, Xuejun Gu, Steve Jiang, and Nick Gans. Vision-based control of a soft-robot for Maskless Cancer Radiotherapy. *IEEE Conference on Automation Science and Engineering (CASE)*, Fort-Worth, Texas, August 2016. DOI: 10.1109/CoASE.2016.7743378.

Olalekan Ogunmolu, Xuejun Gu, Steve Jiang, and Nick Gans. A Real-Time Soft-Robotic Patient Positioning System for Maskless Head-and-Neck Cancer Radiotherapy. *IEEE Conference on Automation Science and Engineering (CASE)*, Gothenburg, Sweden, August 2015. DOI: 10.1109/CoASE.2015.7294318.

Invited Talks

Open Robotics — Soft-Robotic Position Correction Mechanisms in Intensity-Modulated Radiation Therapy. Open Robotics Foundation, Mountain View, CA, USA. January 2019.

UChicago — Robotic Radiotherapy: Automating Position Correction in Intensity-Modulated Radiation Therapy. Department of Radiation and Cellular Oncology, The University of Chicago, Chicago, IL, USA. November 2018.

ATR CNS Labs — Minimax Iterative Dynamic Game. Department of Brain Robot Interface, Computational Neuroscience Labs, ATR, Osaka, Japan. August 2018.

Stanford University — Robotic Radiotherapy: Automating Position Correction in Intensity-Modulated Radiation Therapy. Department of Energy Resources Engineering, Stanford University, Stanford, CA, USA. November 2018.

UTSW, Dallas, TX — A 3-DOF Neuro-Adaptive Patient Pose Correcting System For Frameless and Maskless Cancer Radiotherapy, *Physics Research Seminar Series, Radiation Oncology Department, UT Southwestern Medical Center,* Dallas, TX, USA. March 2017.

IEEE Arlington, TX — Towards automated accurate patient positioning in maskless cancer radiotherapy. *IEEE Computational Intelligence Society,* UT Arlington, TX, USA. December 2015.

Experience

Spring - Summer 2016 — **Hardware Integration Intern, Amazon Robotics, North Reading** , MA,
Wrote and deployed the SLAM algorithm for the Zeus mobile robot project. Integrated Amazon Echo to the Hermes robot for speech-based navigation. Designed and integrated the software architecture for the web-based client and server system for the Hermes mobile robot. Wrote the ROS codebase for GYGES Stations line scanners. Wrote test cases, and defined test procedures for 2D/3D sensors required on the new stow and sort robot development stations at Amazon FCs. Modeled and designed 3-D sensor plates test material in hand sketches and SolidWorks .

Awards and honors

- **President's Teaching Excellence Award for Teaching Assistants** — Nominated Feb. 2017
- **IEEE RAS Travel Award** — August 2016
- **Ericsson Graduate Fellowship** — 2015 - 2016
- **Jonsson Scholarship** — 2014 - 2015
- **Achievement Award, University of Florida,** *(Declined)* — Fall 2014
  Mech & Aerospace Engineering Dept.
- **PTDF Overseas Scholarship Award [Nigeria]** ∼1.7% acceptance, — 2011 - 2012
- **Federal Government (of Nigeria) Scholarship,** ∼3.6% acceptance, — 2002
- **Ondo State (Nigeria) Scholarship** ∼10% acceptance, — 2004

Computing

Programming — C++, Python, Lua, MATLAB/LabVIEW – in that order.
– **C++:** the point cloud, opencv, boost, eigen e.t.c. libraries; c++11/14 standards.
– **MATLAB, LabVIEW**: system identification, control, signal processing, fpga, robotics modules/toolkits
– **Python** SciPy tools including: matplotlib, numpy, and scikit learn.
– **Neural Network Frameworks: Torch 7** [cutorch, cudnn, cunn, the display, rnn and conv-net], and **pytorch**. Familiar with **caffe**, and **tensorflow**.

*Nix OSes — Ubuntu, Debian. Familiar with openSUSE.

ROS — ROS Hydro/Indigo/Jade/Kinetic for vision, estimation, function approximation, and control tasks.

Web — HTML, Markdown. Familiar with socket.io, node.js, and express.js,

Select OpenSource Contributions

savgol — C++ Implementation of Savitzky-Golay Differentiation Coefficients and Filters. (Available at https://github.com/lakehanne/savitzky-golay)

pcl — The Point Cloud Library (Available at https://github.com/PointCloudLibrary/pcl).

ensenso — Drivers for runing the ensenso camera with the point cloud library. (Available at https://github.com/lakehanne/ensenso)

rnn — Recurrent Neural Networks in Torch7. (Available at https://github.com/element-research/rnn)

gps — Catkinized version of Levine et. al's guided policy search algorithm in ROS Indigo (Available at https://github.com/lakehanne/gps).

Other interests and activities

Reviewer, International Federation of Automatic Control World Congress (***IFAC***) Jan 2017
Most-viewed writer in Control Engineering, ***Quora*** Oct/Nov. 15; Mar/April16. Dec. 16 - Now.
Most-viewed writer in ROS, ***Quora*** June - August 2016
Teacher Badge ***Stackoverflow.com*** 2015 – Present
Scholar Badge ***Stackexchange.com*** 2015 – Present