Olalekan Ogunmolu

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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, Adwait Kulkarn, Yonas Tadesse, Xuejun Gu, Steve Jiang, and Nick Gans. A 3-DOF Soft Robot System For Frameless and Maskless Cancer Radiotherapy. *Under Review at IEEE/RSJ International Conference on Robot and Systems*: *To be presented at IROS 2017*, Vancouver, BC, Canada. September 2017.

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

Olalekan Ogunmolu, Nick Gans, Steve Jiang, Xuejun Gu. An Image-Guided Soft Robotic Patient Positioning System for Maskless Head-And-Neck Cancer Radiotherapy: A Proof-of-Concept Study. *American Association of Physicists in Medicine (AAPM)* Annual Meeting, July 2015.

Olalekan Ogunmolu, Autonomous Navigation of a Rotor-craft unmanned aerial vehicle using machine vision. .
MS Thesis, August. 2011. Advisor: Tony J. Dodd, University of Sheffield, England.

Olalekan Ogunmolu, Single Fractional Parentage Coefficients in the sd-Shell Nuclei .
BS Thesis, Nov. 2004. Advisor: Ademola Amusa, Adekunle Ajasin University, Nigeria.

Invited Talks

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 .

Fall '14 - Present **Research Assistant, Sensing, Robotics, Vision, Control, and Estimation (SeRViCE) Lab**, *University of Texas at Dallas*.

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