Olakunle Eso, Ph.D.

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SUMMARY   10+ years of extensive experience in the medical ultrasound space. Involved in every facet of ultrasound device research, development, and manufacturing; from transducer design to analog front-end design, to post-processing using novel signal processing techniques. Possess leadership temperament and technical expertise to lead a project from feasibility through product development, to final product.

PROFICIENCIES   C/C^{++}, Python, Matlab, Linux, Labview, Qt, SQL, Altium, Spice, Onscale, Field II, K-Wave, SolidWorks

EXPERIENCE

Senior Electrical Engineer   **03/2020 − Present**
Neural Analytics, Los Angeles, California

- Responsible for electrical subsystem definition and product specification for a Robotic Doppler Ultrasound System
- Responsible for the design of analog, RF, DC-DC power converters, transmitter & receiver architecture for a Robotic Doppler Ultrasound System
- Manage cross-functional signal processing improvement for a Robotic Doppler Ultrasound System.

Senior Systems Engineer   **09/2019 − 03/2020**
Neural Analytics, Los Angeles, California

- Analog front-end design for a Bilateral Robotic Doppler Ultrasound System.
- Development of test and characterization methods to enhance the performance of a Robotic Doppler Ultrasound System.
- Development of envelope and Emboli detection algorithms using innovative signal processing techniques to improve the search performance of a robotic Doppler system.

Senior Ultrasound Transducer Engineer   **07/2018 − 09/2019**
Neural Analytics, Los Angeles, California

- Technical lead for a transducer development project for a Robotic Doppler Ultrasound System aimed at enhancing sensitivity, reducing manufacturing cost and eliminating costly calibration processes.
- Collaborated with a manufacturing partner to develop novel manufacturing processes to satisfy project charter.

Senior Sensor Engineer   **07/2017 − 07/2018**
H2Scan Corporation, Valencia, California

- Designed and implemented a technique for improving the reporting accuracy and response times for chemical sensors.

- Conducted statistical evaluation of sensor manufacturing processes to improve yield and scalability.
- Solid state sensor research and development

Manufacturing Engineering Manager 09/2015 − 07/2017
Rivanna Medical, Charlottesville, Virginia

- Established the manufacturing department prior to the launch of Rivanna's flagship product, Accuro.
- Provided direct oversight for all manufacturing processes.
- Created manufacturing test procedures and work instructions.
- Designed and implemented new manufacturing processes and testing methodology.
- Investigated Corrective and Preventative Actions (CAPA) for all critical electronic components.
- Supported quality management system for regulatory compliance (e.g. FDA, UL, TUV, CE, ISO 13485, IEC 60601).
- Oversaw all supply chain and vendor liaison.
- Managed all manufacturing personnel.

R&D/Systems Engineer 09/2014 − 07/2017
Rivanna Medical, Charlottesville, Virginia

- Designed and implemented a synthetic aperture technique using least-squares estimation that improved resolution and SNR of images generated by a low-frequency mechanically steered piston transducer used in Accuro.
- Designed and implemented beamforming techniques for an 8-element annular array transducer capable of low and high frequency excitation.
- Applied signal processing techniques to improve dynamic focusing efficacy of an 8-element annular array transducer.
- Designed a patient reporting software tool for deployment with Accuro.
- Designed and conducted Accuro system characterization for performance and accuracy improvements.
- Implemented the front-end UI design for Accuro.

Research Assistant 05/2007 − 08/2014
University of Utah, Salt Lake City, Utah

- Developed and designed a system for automated detection of congenital heart defects using four-dimensional ultrasound images. The system implementation was a multi-layered approach combining various techniques from digital signal processing, computer vision, and machine learning.
- Developed an unsupervised machine learning routine for segmenting individual fetal heart chambers in a four-dimensional ultrasound image.
- Worked on an optimization scheme for minimal sensor placement for structural health monitoring in airplanes.
- Applied compressed sensing technique to under-sample and reconstruct acoustic sensor measurements in structural health monitoring without any significant information loss.

Adjunct Instructor   **08/2012 − 05/2013**
University of Utah, Salt Lake City, Utah

- A pioneer instructor in the engineering-calculus course sequence at the University of Utah. The program is a joint venture between the College of Engineering and the Mathematics department. The program was implemented to improve retention rate in engineering majors by incorporating engineering specific applications in calculus curriculum.

Analyst   **05/2005 − 07/2007**
TerraTek, Salt Lake City, Utah

- Performed geophysical data analysis and data reduction of oil shale measurements.
- Conducted statistical output prediction for oil wells.
- Maintained and updated software codes for performing oil well prediction.

Intern   **05/2006 − 05/2007**
L-3 Communications, Salt Lake City, Utah

- Developed and implemented an algorithm for improving carrier synchronization and phase tracking for QPSK modulated signals in low SNR environments. Results were used as part of my undergraduate senior project.

EDUCATION   *Doctor of Philosophy*, Electrical & Computer Engineering   05/2014
University of Utah, Salt Lake City, Utah

Bachelor of Science, Electrical & Computer Engineering, Mathematics   05/2007
University of Utah, Salt Lake City, Utah