BRIAN BOGUE-JIMENEZ, M.S.

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EDUCATION

M.S, Electrical and Computer Engineering (GPA: 3.81) 2020 – 2022
University of Memphis, TN, USA

B.E, Electrical Engineering (GPA: 3.56) 2015 – 2020
University of Memphis, TN, USA

RESEARCH INTERESTS

Investigations into optical imaging technologies and instrumentation with an emphasis on microscopy and quantitative phase imaging. Includes digital holographic microscopy, and machine learning/artificial intelligence aided reconstruction methods.

RESEARCH EXPERIENCE

GRADUATE RESEARCH ASSISTANT Aug 2023 – Dec 2023
ECE Department, University of Massachusetts-Dartmouth
Project: Diatom classification via deep learning using raw holograms

GRADUATE RESEARCH ASSISTANT May 2020 – July 2023
EECE Department, University of Memphis
Thesis: Exploring Non-Invasive Features for Continuous Glucose Monitoring

UNDERGRADUATE RESEARCH ASSISTANT Aug 2018 – May 2020
EECE Department, University of Memphis s
Project: Biometric Analysis and Machine Learning-based Motion Capture System

INTERNSHIPS

VSFS DEPARTMENT OF ENERGY INTERN COORDINATOR May 2020 – Dec 2021
Project: Led team of interns in the development and deployment of *MediaWiki* automation bots for the D.O.E. department-wide wiki, *Powerpedia*.

UNIVERSITY SERVICE

V.P. of VISCAL AFFAIRS AND AWARDS Dec 2021 – May 2023
Graduate Student Organization (GSA), University of Memphis
-Primary responsibilities included the management of GSA travel funds (approx. $90,000) and fair distribution of these funds to graduate students
-Developed and organized several University events, such as the Student Research Forum, GSA Award ceremony, and Professional Development seminars

Graduate Representative in the UofM Strategic Plan Sept 2022-Jan 2023
-Represented graduate student in the Strategic Planning committee which will be guide the Universities development from 2023 to 2028

PUBLICATIONS

Journal Published

1. B. Bogue-Jimenez, C. Trujillo, A. Doblas. "Comprehensive tool for a phase compensation reconstruction method in digital holographic microscopy operation in non-telecentric regime," *PLoS ONE,* 18(9), e0291103 (2023); https://doi.org/10.1371/journal.pone.0291103.
2. Dahal, K.; Bogue-Jimenez, B.; Doblas, A. "Global Stress Detection Framework Combining a Reduced Set of HRV Features and Random Forest Model." *Sensors*, 23(11), 5220 (2023). https://doi.org/10.3390/s23115220.
3. B. Bogue-Jimenez, X. Huang, D. Powell, A. Doblas. "Selection of Noninvasive Features in Wrist-Based Wearable Sensors to Predict Blood Glucose Concentrations Using Machine Learning Algorithms," *Sensors*, 22(9), 3534 (2022); https://doi.org/10.3390/s22093534.
4. C. Hayes-Rounds, B. Bogue-Jimenez, J. Ivan Garcia-Sucerquia, O. Skalli, A. Doblas. "Advantages of Fresnel biprism-based digital holographic microscopy in quantitative phase imaging," *J. Biomed. Opt.* 25(8), 086501 (2020); https://doi.org/10.1117/1.JBO.25.8.086501.

Conference Publications

5. B. Bogue-Jimenez, Raúl Castañeda, Carlos Trujillo, Ana Doblas. "Diatom Classification via Deep Learning using Raw Holograms captured by a Lenless Holographic System," *Proc. SPIE 12903, AI and Optical Data Sciences V,* 12903-46 (31 January 2024).
6. Brian Bogue-Jimenez, Shashwat Patra, Carlos Trujillo, Ana Doblas. "Utilization of Deep Learning methods for automatic reconstruction of quantitative phase images in non-telecentric digital holographic microscopy," *AIP Conf. Proc*. 28 September 2023; 2872 (1): 040004. https://doi.org/10.1063/5.0165449.
7. B. Bogue-Jimenez, C. Trujillo, A. Doblas. "Overview of the automatic reconstruction method for quantitative phase imaging using a digital holographic microscope operating in non-telecentric regime," *Proc. SPIE 12389, Quantitative Phase Imaging IX*, 123890B (16 March 2023); https://doi.org/10.1117/12.2651944
8. B. Bogue-Jimenez, Shashwat Patra, Carlos Trujillo, Ana Doblas, "Utilization of Deep Learning Methods for Automatic Reconstruction of Quantitative Phase Images in Non-telecentric Digital Holographic Microscopy," presented as oral presentation at the 11th International Conference on Mathematical Modeling in Physical Sciences, September 2022.
9. B. Bogue-Jimenez, D. Powell, X. Huang, A. Doblas, "Exploring noninvasive solutions for continuous glucose monitoring," Proc. SPIE PC12123, Smart Biomedical and Physiological Sensor Technology XIV, PC1212307 (8 June 2022); https://doi.org/10.1117/12.2619056
10. B. Bogue-Jimenez, X. Huang, D. Powell, and A. Doblas, "Multisensory Non-invasive approach for Continuous Glucose Monitoring," presented as oral presentation at Mid-South Biomechanics Conference, February 2022.
11. C. Hayes-Rounds, B. Bogue-Jimenez, J. Garcia-Sucerquia, O. Skalli, A. Doblas, "Assessment of a Fresnel biprism-based digital holographic microscope for fast, high-sensitivity, high-resolution and polarization-sensitive phase imaging," *OSA Imaging and Applied Optics Congress,* paper3W5A.2(2021)
12. C. Hayes-Rounds, B. Bogue-Jimenez, O. Skalli, J. Garcia-Sucerquia, A. Doblas, "Polarization-sensitive digital holographic microscopy using a Fresnel biprism (Conference Presentation)," Proc. SPIE 11402, Three-Dimensional Imaging, Visualization, and Display 2020, 114020L (22 April 2020); https://doi.org/10.1117/12.2555106

TEACHING AND MENTORING EXPERIENCE

EECE 3240 – Electromagnetic Field Theory
EECE 3213 – Electronics Lab
EECE 2203 – Circuits I Lab
EECE 4901/6901 – Intro to Optical Design
EECE 2207 – Engineering to Math Applications

HONORS & AWARD

The Graduate Student Association Executive Service Award May 2023

This award recognizes GSA Executive Board members who have best combined high academic and leadership achievements.

Dean's List, Herff College of Engineering, University of Memphis Fall 2018 – Spring 2020

Cum laude, Bachelor's Degree, University of Memphis May 2020

Johnetta Haley Scholarship, Southern Illinois University at Edwardsville Fall 2015- Spring 2017