

Ishmael Johnson-Bey

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PROFESSIONAL SUMMARY

Biomedical Engineering graduate from Carnegie Mellon University with experience in software engineering, and virtual reality research. Undergraduate double major in Computer Science and Neuroscience provided experience in human cognition, sensation, perception as well as algorithms, data structures, and artificial intelligence. Interested in researching and developing intelligent agents for video games.

RESEARCH INTERESTS

Computer Games, Artificial Intelligence, Machine Learning, Multi-agent systems, Reinforcement Learning

EDUCATION

Master of Science, Biomedical Engineering	Carnegie Mellon University	2019
Bachelor of Science, Computer Science	University of Delaware	2017
Bachelor of Science, Neuroscience	University of Delaware	2017

PUBLICATIONS

Hu, Brian, **Ishmael Johnson-Bey**, Mansi Sharma, and Ernst Niebur. "Head movements are correlated with other measures of visual attention at smaller spatial scales." In *Information Sciences and Systems (CISS), 2018 52nd Annual Conference on*, pp. 1-6. IEEE, 2018.

Hu, Brian, **Ishmael Johnson-Bey**, Mansi Sharma, and Ernst Niebur. "Head movements during visual exploration of natural images in virtual reality." In *Information Sciences and Systems (CISS), 2017 51st Annual Conference on*, pp. 1-6. IEEE, 2017.

RESEARCH EXPERIENCE

Biomedical Engineering Research Masters Student in Neural Web Group

Carnegie Mellon University, Pittsburgh, PA

(Oct 2017 – May 2019)

- Advisor: Dr. Pulkit Grover
- Lead efforts on brain-computer interface research aimed at virtual/mixed reality
- Utilized Unity and Steam VR to deploy the environments on an HTC VIVE

ORAU Journeyman Fellow at U.S. Army Research Laboratory

Human Research and Engineering Directorate, Aberdeen Proving Ground, MD

(Jun 2018 – May 2019)

- Advisor: Dr. Brent J. Lance
- Researched auditory P300 EEG-based brain-computer interfaces for VR
- Built VR environment for testing various event-related potentials paradigms

ORAU Summer Journeyman Fellow at U.S. Army Research Laboratory

Human Research and Engineering Directorate, Aberdeen Proving Ground, MD

(Jun 2017 – Aug 2017)

- Advisor: Dr. Brent J. Lance
- Implemented a P300 speller application using Python, OpenBCI, and a Raspberry Pi

- Learned about the application deep learning and other machine learning techniques to classifying physiological data

Research Intern/Virtual Reality (VR) Developer for the Computational Neuroscience Lab

Johns Hopkins University Zanvyl Krieger Mind/Brain Institute, Baltimore, MD

(June 2015 – August 2015)

- Advisor: Dr. Ernst Niebur
- Collaborated with a group of students to investigate the role of head movements in human visual exploration
- Developed and deployed a VR environment using Unity and Google Cardboard VR
- Found that head movements are positively correlated with visual selective attention

SOFTWARE ENGINEERING EXPERIENCE

Software Engineering Intern

SevOne, Newark, DE

(June 2016 – August 2016)

- Conducted manual tests
- Wrote PHP acceptance test fixtures using the FitNesse framework
- Debugged and fixed a software memory leaks critical to release

Microsoft Student Partner

Microsoft, Newark, DE

(August 2015 – June 2016)

- Led monthly skills workshops on game development using Unity or DirectX
- Informed students on methods to integrate Microsoft Azure in their personal and academic projects
- Operated a Facebook page for coordinating events and connecting with students

TEACHING EXPERIENCE

Teaching Assistant for CISC181: Introduction to Computer Science II

University of Delaware, Newark, DE

(Feb 2017 – May 2017)

- Taught object-oriented programming principles using Java
- Guided students in the development of Android games
- Periodically gave lectures

SKILLS

Programming Languages: Python (intermediate), C++(intermediate), C# (intermediate), JavaScript (intermediate), Java (intermediate), Lua (novice)

Software: Unity Engine, MATLAB

Languages: English (Native), Japanese (N5)

AWARDS, GRANTS, & HONORS

Spring 2018 Carnegie Mellon University Graduate Small Project Help Research Grant

2017 Steven Geracimos Memorial Award (University of Delaware, Computer Information Sciences Department)

2015 Elbert C. Wiser RISE Corporate Friends Award (University of Delaware, College of Engineering)

EXTRACURRICULAR ACTIVITIES

University of Delaware Computer Animation and Game Design (CAGD), President, May 2015 – May 2016

University of Delaware Resources to Insure Successful Engineers, Student Advisory Council, Sept 2014 – May 2017
University of Delaware Mascot Team, Team Captain, May 2014 – May 2017