Bryan Orabutt

Education

2019–2023 **PhD in Computer Engineering**
Washington University in St. Louis, St Louis, MO

2016–2018 **Masters of Science in Electrical Engineering**
Southern Illinois University Edwardsville, Edwardsville, IL
Thesis: Design and Analysis of a Multi-Channel Discriminator Integrated Circuit for Use in Nuclear Physics Experiments

2012–2015 **Bachelors of Science in Computer Engineering**
Southern Illinois University Edwardsville, Edwardsville, IL
Mathematics Minor

Major Research Experience

Graduate Student, Washington University in St Louis (PI: Roger Chamberlain)

- Designed a mixed-mode system capable of pulse-shape discrimination
- Used machine learning to perform data analysis with cloud based GPU and FPGA systems
- Conducted research into custom data acquisition systems for use in analyzing nuclear reaction experiments

Graduate Student, Southern Illinois University Edwardsville (PI: George Engel)

- Designed custom integrated circuit for precisely detection onset of radiation in a scintillator
- Designed test bench tools for modeling nuclear radiation striking scintillator detectors
- Taped out and tested integrated circuit for detecting radiation

Presentations

Oral Presentation

October 2020 **2020 Fall Meeting of the APS Division of Nuclear Physics**
Virtual Applied Optimization on Mixed Mode Systems for Pulse Shape Discrimination

Poster Presentation

Feb 2021 **Stewardship Science Academic Programs Symposium** Virtual
Mixed Mode Systems for Pulse-Shape Discrimination

Feb 2020 **Stewardship Science Academic Programs Symposium** Washington, DC
Multi-Channel Integrated Circuits for Use With Si-Strip Detectors

Feb 2019 **Stewardship Science Academic Programs Symposium** Albuquerque, NM
Multi-Channel Integrated Circuits for the Detection and Measurement of Ionizing Radiation

Teaching

2020 **Graduate Teaching Assistant**
Washington University in St. Louis
Computer Systems Architecture I
Responsibilities: Graded assignments, quizzes and exams. Held weekly office hours.

2019 **Graduate Teaching Assistant**
Washington University in St. Louis
Computer Systems Architecture I
Responsibilities: Graded assignments, quizzes and exams. Held weekly office hours.

2018 **Lecturer**
Southern Illinois University Edwardsville
Electronic Circuits I, Digital VLSI Design
Responsibilities: Graded assignments, quizzes and exams. Held weekly office hours. Prepared and delivered weekly lecture material to 80 junior and senior level undergraduate students

Professional Associations

○ Institute for Electrical and Electronics Engineers

○ Association of Computerized Machinery

○ American Physical Society