**EMILY J. SHEETZ**

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**EDUCATION**

**Bachelor of Arts, Mathematics and Computer Science Majors May 2018**

**Spanish Minor**

Monmouth College, Monmouth, Illinois

GPA: **3.969** / 4.0

**HONORS**

Honors Program

Blue Key Honor Society Secretary

Alpha Lambda Delta

**RESEARCH**

**Analog and Digital Sound Synthesis Summer 2017**

Monmouth College, Monmouth, IL

* Introduced to software for high quality sound recording and visualizing sound waves
* Explored FM synthesis with non-sinusoidal carrier waves using the LittleBits Synth Kit
* Presented research to faculty and students

**Research Experience for Undergraduates on Smart UAVs Summer 2017**

Auburn University, Auburn, AL

* Visual homing on unmanned aerial vehicles (UAVs)
* Introduced to Python, *OpenCV*, and machine learning implementations
* Implemented simulation framework for testing techniques in MATLAB
* Worked independently to research, design simulation framework, and find solutions

**CAT Vehicle Research Experience for Undergraduates Summer 2016**

University of Arizona, Tucson, AZ

* System identification to develop a mathematical model for internal vehicle dynamics
* Introduced to autonomous systems, control theory, and model predictive control
* Worked independently to research, analyze data, troubleshoot, and solve problems
* Operated the Cognitive Autonomous Test (CAT) Vehicle for project testing

**High Speed Imagery and Mathematical Modeling August 2015**

Monmouth College, Monmouth, IL

* Conducted experiments for introduction into the mathematics of chaos theory
* Supervised students during Summer Opportunity for Intellectual Activity Projects
* Presented research to faculty, students, and community members

**Research in Mathematics, Particle Image Velocimetry 2014 – 2015**

Monmouth College, Monmouth, IL

* Particle image velocimetry to investigate water flow around airfoils at angles of attack
* Operated lab equipment including lasers, flow cell, and Phantom v9.1 high speed camera
* Created poster presentation and presented research to students and faculty members

**High Speed Imagery and Mathematical Modeling August 2014**

Monmouth College, Monmouth, IL

* Focused on experiment design, data analysis, and introduction to mathematical modeling
* Collaborated with mathematics majors to conduct experiments
* Gained experience designing experiments and using *Mathematica* and MATLAB

**WORK EXPERIENCE**

**Computer Science Tutor August 2016 – Present**

Monmouth College, Monmouth, Illinois

* Utilize knowledge of programming practices and languages C++ and Java
* Lead group discussions of material and explain concepts one-on-one
* Encourage students to think about problems and solutions from new perspectives

**Writing Tutor May 2016 – Present**

Monmouth College, Monmouth, Illinois

* Provide direction to students at any point in the writing process
* Utilize nondirective tutoring methods to help students to improve their writing process
* Develop relationships with students through encouragement and validation of their efforts

**Speech Assistant August 2015 – Present**

Monmouth College, Monmouth, Illinois

* Assist students at any point in the process of drafting or delivering a speech
* Observe speeches, evaluate speakers’ needs, and provide feedback on speeches
* Develop relationships with students by encouraging them and supporting their efforts

**Research Assistant June 2016 – August 2016**

University of Arizona, Tucson, Arizona

* Worked under the supervision of Dr. Jonathan Sprinkle and doctoral students
* Collaborated with peers to research, write MATLAB scripts, and design experiments
* Experienced writing academic papers and presenting research

**Research Assistant May 2017 – July 2017**

Auburn University, Auburn, Alabama

* Worked under the supervision of Dr. Saad Biaz and Dr. Richard Chapman
* Collaborated with peers to research, develop approach to problem, and write code
* Wrote academic paper, created poster, and presented research

**SOFTWARE AND PROGRAMMING LANGUAGES**

Java

C++

MATLAB

Python

*Mathematica*

**LEADERSHIP AND INVOLVEMENT**

**Wind Ensemble August 2014 – Present**

* Flute Section Leader (August 2016 – Present)
* President (August 2017 – Present)
* Secretary (August 2016 – May 2016)

**Marching Band August 2014 – Present**

* Flute Section Leader (August 2015 – Present)