SARAH F. GIBBONS

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EDUCATION

Texas State University San Marcos, TX
B.S. Computer Science, B.S. Applied Mathematics August 2018, December 2018
Major GPA: 3.0 and GPA: 3.5

TECHNICAL SKILLS

Programming languages: C++, C, Java, Python, HTML, JavaScript, CSS

EXPERIENCE

Undergraduate Research at Texas State University San Marcos, TX
Applied Mathematics January—Present
- Worked on a **team** mentored by Dr. Daniela Ferrero; explored whether an efficient **algorithm** could be developed to determine the zero-forcing number (a **fast-mixed search** variant in computer science) of a specific graph families.
- Derived a new **algorithm** for finding the zero-forcing number
- Implemented the algorithm in **C++** demonstrating the new algorithm yields the desired results for arbitrarily sized graphs [Publication in progress]

Undergraduate Research at Texas State University San Marcos, TX
Computer Science June—August 2016
- Mentored by Dr. Dan Tamir and Dr. Randy Davila, researched exhaustive, **greedy** and recursive **algorithms** on structured graphs that are used in computing NP-Hard graph properties
- Produced a new lower-bound on the independence number, an NP-Hard graph invariant
- Used **Python** to implement the Havel-Hakimi algorithm and Maxine algorithm, link to code: **GitHub**

Undergraduate Lab Assistant at Texas State University San Marcos, TX
Tutor June 2017—Present
- Tutor students 15 hours a week in **C++** and **Java.** Help students on programming assignments in the following: Foundations of Computer Science I and II (**C++**), Data Structures (**C++**), Object Programming and Design (**Java**), and Computer Architecture (**C++**)

PROJECTS

Hack for Change Austin, TX
Hacker June 2017
- Created an online marketplace that connects small farmers directly to buyers of fresh local produce
- Applied the **Ionic** framework with **Cordova** CLI, **Node.js** in collaboration with six other individuals.
- Worked on coding the login and sign up pages in **HTML**, link to code: **GitHub**

Communication Design Hackathon 2017 San Marcos, TX
Hacker March 2017
- Wrote **Python** scripts to extract and consolidate Capital Metro transportation datasets
- Utilized Python to simulate the number of seats available on a bus at each stop

Personal Website
- Used **HTML**, **JavaScript, CSS** to create a personal web page where you can find my portfolio, resume and contact information.

- Code: **GitHub** and link to my page **Sarah's Website**

LEADERSHIP EXPERIENCE

Association of Women in Mathematics (AWM)   San Marcos, TX
President   August 2017—Present
- Lead 20 students who promoted an increased knowledge of and greater interest in the mathematical sciences
- Organized career preparation workshop
- Mentored and encouraged women as they prepare for careers in science and mathematics

Young Mathematicians Conference 2017   Columbus, OH
Speaker   August 2017
- Invited Talk on Zero Forcing and Propagation on Generalized Petersen Graphs

Women Doing Math Program   San Marcos, TX
Problem Solving Challenge, Winner for the Women Doing Math Program   June 2016