

# SARAH F. GIBBONS

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## EDUCATION

### Texas State University

B.S. Computer Science, Applied Mathematics Minor

San Marcos, TX

May 2019

## TECHNICAL SKILLS

### Programming:

*Computer science stack: C, C++, Java, Linux/Unix*

*Data Science: Python, Pandas, NLTK, NumPy, SpaCy, scikit-learn*

## EXPERIENCE

### Data Science & Analytics Intern at TenantCloud

September – December 2018

- Preprocessed data and performed statistical analysis on text. Used natural language processing methods (NLP) to transform data identify context, relationship and prioritize 60k service requests
- Used predictive analytics and NLP tools such as *Spacy*, *Gensim's Word2Vec* and *topic modeling* with Latent Dirichlet Allocation (LDA) to provide compact/quantitative description of text
- Developed a supervised machine learning task to train an embedded neural network with Python library *Genism*.
- Created a chatbot (retrieval-based model) using document similarity, TF-IDF and cosine similarity (sckit-learn)

### Developer/ Data Science Intern at State Street

May - August 2018

- Worked with data scientists on cognitive team using *computational linguistics*, *Python3* and natural language processing library, *SpaCy*, to develop and detect emotion/tone in text documents
- Worked on the research team using *React.js*, *GraphQL* to implement UX design for a common service platform that hosts different financial services

### Undergraduate Research at Texas State University

*Applied Mathematics (Graph Theory)*

Spring 2017

- 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 specific graph families
- Derived a new algorithm for finding the zero-forcing number of Generalized Petersen Graphs [Publication in progress]

### Undergraduate Lab Assistant at Texas State University

*Tutor*

Summer, Fall 2017

- Foundations of Computer Science I, II (C++) Data Structures (C++), Object Oriented Programming (Java)

### Undergraduate Research at Texas State University

*Computer Science*

June—August 2016

- Researched exhaustive, greedy, and recursive algorithms for computing NP-Hard graph properties on structured graphs
- 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, <https://github.com/sfg11/Graph-Theory-Algorithms-in-Python-2016>

## PROJECTS

### Hack for Change

*Hacker*

Summer 2017

- Created an online marketplace that connects small farmers directly to buyers of fresh local produce
- Worked on coding the login and sign up pages in HTML

## **Personal Website**

- Used **HTML, JavaScript, CSS** to create a personal web page where you can find my portfolio, resume and contact information. <https://sfg11.github.io/Sarahs-Website/>

## ***LEADERSHIP EXPERIENCE***

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**Association of Women in Mathematics (AWM), *President***

*Summer 2017—Present*

**Young Mathematicians Conference 2017, *Speaker***

*Summer 2017*

**Women Doing Math Program**