

# Jacob Rogers

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## EDUCATION

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### University of Utah

*Master of Science in Computer Science*

Salt Lake City, UT

Aug. 2021 – May 2023

### University of Utah

*Bachelor of Science in Physics, Minor in Computer Science*

Salt Lake City, UT

Aug. 2019 – May 2021

### Salt Lake Community College

*Associate of Science in Physics with High Honors*

Salt Lake City, UT

Aug. 2016 – May 2018

## RELATED EXPERIENCE

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### Undergraduate Researcher

Jan. 2018 – May. 2018

*Salt Lake Community College*

*Salt Lake City, UT*

- Conducted data analysis and interpretation of astronomical spectroscopic measurements for the contact binary HV Uma.
- Utilized Python (including NumPy, Matplotlib, Seaborn, and SciKit-Learn) to filter noisy data, develop extrapolation techniques, organize temporal patterns, and visualize the results.
- Presented 'HV Uma - A Contact Binary' at the Salt Lake City Community College Symposium, a pivotal moment in my academic journey as it marked my largest presentation to date.

### Volunteer STEM Tutor

Feb. 2017 – May 2018

*Salt Lake Community College*

*Salt Lake City, UT*

- Tutored: Algebra, Trigonometry, Calculus I, II, III, Physics for Scientists and Engineers I and II, and CS 1410 (Object-Oriented Programming) at the Dumke Center for STEM Learning.
- Collaborated with a team of tutors to facilitate problem-solving in complex STEM-related topics through effective communication and support for students in need.

## PROJECTS

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### SpamScanner | *Python, TensorFlow, Kivy, Buildozer; GitHub.com/SpamScanner*

April 2023 – Present

- Led a collaborative team in the development of an Android application that utilizes machine learning techniques for detecting potential fraudulent (ham or spam) SMS.
- Collected, organized, and cleaned a substantial dataset for both training and testing purposes. Implemented Natural Language Processing techniques, including word stemming and lemmatization, to process the data.
- Utilized the TensorFlow framework to implement a deep neural network for training a spam classifier, achieving an impressive 96.9% detection accuracy.
- Utilized the Kivy framework to create an internal connection between the spam classifier and a user-friendly UI. Packaged and deployed the Android application using the Buildozer framework.

### Tank Wars | *C#, .NET, GitHub; Private Repo: GitHub.com/TankWars*

April 2021 – May 2021

- Collaborated in the development of an online multiplayer tank battle game using C# and .NET, contributing to full-stack deployment, server-side development, and client-side development.
- Ensured thread safety in a multi-threaded application by implementing client-server communication and rendering for game data and employing object-oriented programming principles, separating the model, view, and controller for each system component.
- Assisted in the overall design and gameplay mechanics for a clean codebase and smooth user experience.

### Tic Tac Toe | *Java, Eclipse; GitHub.com/TicTacToe*

April 2017 – May 2017

- Designed and developed a Tic Tac Toe game, following best software practices and Object-Oriented principle programming for a fun and interactive UI and gameplay experience.

## TECHNICAL SKILLS

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**Languages:** Java, Python, C, C#, SQL, JavaScript, HTML, CSS

**Frameworks:** React, .NET, JUnit, Kivy, Buildozer, TensorFlow

**Developer Tools:** GitHub, Linux/Unix/Ubuntu, Spyder, VS Code, Visual Studio, Eclipse

**Libraries:** pandas, NumPy, Matplotlib, SciKit-Learn, Java SE Security