

# Richard Sear

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## Education

**BACHELOR OF SCIENCE | MAY 2021 | THE GEORGE WASHINGTON UNIVERSITY**

- Majors: Computer Science, Physics
- University Honors Program | GPA: 3.98
- Student Organizations: ACM, GW Undergraduate Review, GW Robotics

## Work Experience

**CHIEF TECHNOLOGY OFFICER INTERN | BUCHANAN & EDWARDS, INC.**

**MAY 2018 – AUGUST 2018**

- Trained machine learning model capable of identifying major facial emotions with ~15% average error rate
- Trained experimental secondary model to identify microexpressions on neutral faces
- Implemented convolutional neural network using Microsoft's Cognitive Toolkit (CNTK) API for Python
- Conducted unsupervised K-means clustering using the Python Scikit-learn module
- Delivered Azure webapp built with Flask to analyze uploaded images

**UNDERGRADUATE RESEARCH ASSISTANT | GWU PHYSICS DEPARTMENT**

**SEPTEMBER 2018 – PRESENT**

- Working with Dr. Neil Johnson's research team, studying the many-body physics of user behavior in online extremist groups
- Using Python modules (Scikit-learn and Microsoft CNTK) to conduct machine learning experiments on image data
- Running unsupervised machine learning (K-means) to detect trends in profile images
- Training supervised machine learning models to classify emotions and symbols found in profile images

## Projects

**GW UNDERGRADUATE REVIEW: VOLUME 1**

**JANUARY 2017-APRIL 2018**

<https://scholarspace.library.gwu.edu/files/w9505060b>

- Utilized InDesign, Illustrator, and Photoshop to create the first volume of GWUR
- Worked with editorial team and authors to obtain and construct journal elements
- Published journal: ISSN 2578-9201

## Skills & Abilities

### TECHNICAL SKILLS

- Software: Visual Studio Code; Microsoft Office, Azure App Service; Git; Adobe InDesign, Photoshop, Illustrator; Google Analytics
- Proficient in Python, Java, C, HTML, CSS; familiar with MATLAB, LaTeX, Mathematica, JavaScript
- Operating Systems: Windows, macOS, Android, iOS

### LEADERSHIP/TEAMWORK

- Layout Manager and Science/Engineering Editor, GW Undergraduate Review September 2017-Present
- Vice President, GW Robotics April 2018-Present