

# Shane Kopec

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## Education

### ROWAN UNIVERSITY

Bachelor of Science: Computer Science

Glassboro, NJ

May 13<sup>th</sup>, 2022

Relevant Coursework:

- Data Structures and Algorithms, Data Algorithms and Analysis, Computer Lab Techniques
- Data Mining, Artificial Intelligence, Machine Learning

## Technical Skills

**Languages:** Python (Proficient), Java (Proficient), JavaScript (Intermediate), SQL(Intermediate), C, C++, HTML, CSS

**Technologies:** React, Django, SKLearn, Numpy, Matplotlib, Metric Learn, Node.js, Scikit-learn, Jupyter Notebook, AWS

## Projects

### Social Media Music Player:

- Managed team of 6 students developing a full stack social media site utilizing spotify API's to retrieve user data
- Schedule and lead weekly team meetings to discuss past as well as future project developments
- Leveraged Django framework to create user registration, login, and comment forms
- Implemented Python Spotify API for song playback and user data retrieval through cached tokens
- Utilized Bootstrap to provide a modern responsive graphical user interface

### Metric Learn Data Visualization:

- Managed multiple real and synthetic datasets with the goal of creating accurate and precise estimators
- Create pipeline to feed metrics engineered from metric learning algorithms into K-nearest-neighbor classifier
- Plot the difference in accuracy from the metric learning algorithms using Matplotlib
- Included other python libraries SKLearn, Pandas, Numpy, and Metric Learn

### User Login and Registration:

- User authentication and registration accomplished using AWS Amplify and Cognito
- Display current authenticated user fields using React JS, AWS Amplify UI, and Bootstrap
- Account initialized into user pool after an automated email verification link
- Password management system works along side with the verified email

### Perceptron Machine Learning Algorithm:

- Generate perceptron to correctly classify sample points on a 2-D plane into one of two categories
- Update perceptron weights with misclassified points from the previous epoch
- Creates a hypothesis line as close to the original as possible given only the sample data points

### MITRE ATT&CK Data Threat Analyzer:

- Parse 100,000 line ATT&CK STIX Data JSON files into threat objects saved on to Azure database
- Visualize threat objects in an editable and searchable table with autosave to database
- Generate a comprehensive PDF report of selected or all data within the JSON files