



Police Bot:

Enhancing Social Media Governance with Policing Bots

Semester 2 Project Plan Presentation



Overview:

- Team Members and Dates
- Goal and Motivation
- Key Features
- Algorithms and Tools
- Technical Challenges
- System Architecture Diagram
- Evaluation
- Progress Summary
- Milestones
- Task Matrix



Team

Team Members:

- Cody Manning cmanning2020@my.fit.edu
- João Gabriel Silva jsilva2021@my.fit.edu
- Liam Dumbell ldumbell2021@my.fit.edu
- Nickolas Falco nfalco2021@my.fit.edu

Advisor and Client:

- Khaled Slhoub kslhoub@fit.edu

Date(s) of Meeting(s) with the Client for developing this Plan

- First Meeting - January 19, 2024
- Future Meeting Frequency - Bi-weekly (swapping to weekly and twice weekly as needed)



Goal and Motivation

Bot Detection on reddit.com:

- Reddit has Serious Bot problem
- Framework aims to:
 - Detect Bots
 - Determine Purpose of the Bots (beneficial / malicious)
 - Generate recommended decisions for each bot
- Framework should create a better user experience on Reddit or any other applicable Social Media Platform.
- Framework should keep users safe and engaged on the platform



Key Features

- Detect Bots
 - Allow the client to detect artificial users (bots) in a social media platform
 - Analyzing an account's activity to detect suspicious behavior that would indicate whether or not the account is run by a bot.
- Distinguish
 - Allows the client to distinguish beneficial bots from malicious ones.
 - A non-harmful bot is one that is determined to have no negative effects on the social media platform in which it is active
 - A harmful bot is one that is determined to have some form of negative effect on the social media platform it is active on
- Decide
 - Tool will determine the level of maliciousness, and then determining whether reporting the account to the platform administrators is necessary.



Algorithms and Tools

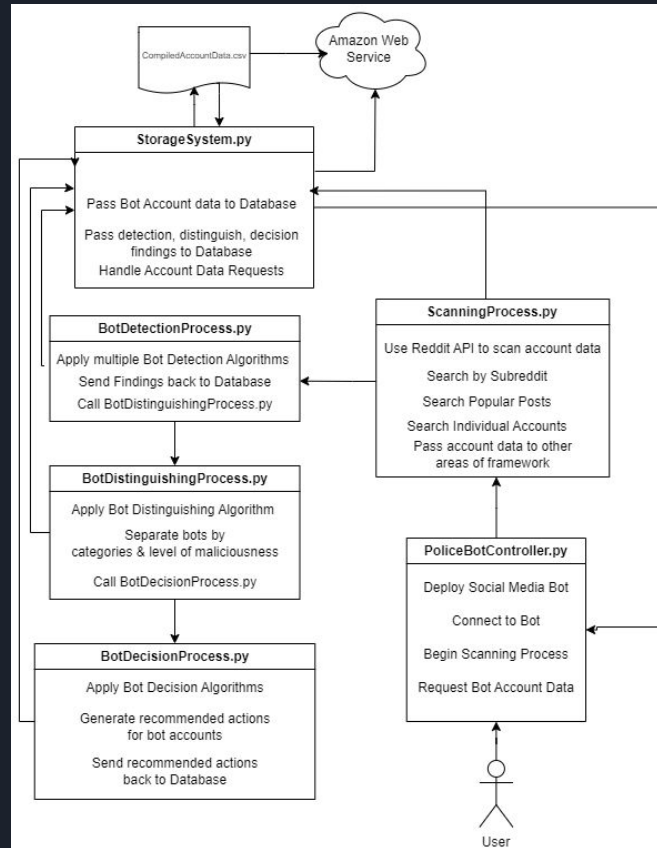
- **Reddit API**
 - Pulls data from the social media website to perform analysis on
- **Python**
 - Automate the process of discovering, scanning, downloading, organizing and analyzing Reddit account data.
- **PRAW Python Library**
 - Interface with the Reddit API
- **CSV Python Library**
 - Create CSV files filled with Reddit Bot Account information
- **MySQL Framework**
 - Store data sent to intermediary CSV files on a MySQL database that can be hosted locally or using AWS



Technical Challenges

- Continue developing their experience using virtual environments for Reddit and using the Reddit API.
- Continue developing their skills creating bots with the proposed functionality.
- Continue developing their skills using the libraries and other methods for developing bots for social media platforms.
- Continue developing their HTML skills to properly understand and use the different social media APIs.

System Architecture Diagram





Evaluation

- Speed
 - Goal to never take longer than 30 seconds to receive data.
- Accuracy
 - 80% accuracy goal for correctly detecting bots.
- Reliability
 - Ideally the framework should return with the same result every single time for the same data set.



Progress Summary

Module / Feature	Completion %	To do
Detection Module	70%	Refine the algorithm for accuracy, begin adding more algorithms that work in tandem with the already established algorithm.
Distinguish Module	0%	Begin work on detecting malicious or beneficial bots.
Decide Module	0%	Create a decide module that figures out what to do with detected bots.
Backend Database	80%	Perhaps begin implementing AWS as our database of choice.



Milestones

- Milestone 4 (Feb 19):
 - Figure out the next algorithm we want to use to work with the established detection algorithm we already have.
 - Begin research on how we are going to implement the decide module
 - Clean up and decide what we are going to do with the database
 - Try to speed up the current working algorithm for the detection module
- Milestone 5 (Mar 18):
 - Work on the deciding algorithm
 - Test accuracy and speed of the two modules, particularly the detection algorithm
 - Combine the two modules into a single framework environment
 - Create poster and ebook page for Senior Design Showcase
- Milestone 6 (Apr 15):
 - Work on and finish the reporting module
 - Clean up and merge all of the modules together
 - Test and bugfix
 - Demo the framework
 - Create Demo Video



Task Matrix

Task	Cody	Liam	Gabriel	Falco
Research detection algorithm to work in tandem with the current one, and implement it if possible.	Research	Research	Research	Research
Work on efficiency for the current detection module	Work on the data structures	See if the API calls can be sped up	Research and implement algorithms for efficiency and accuracy	Assist where needed in efficiency update
Work on the database functionality	Figure out AWS	Implement functionality in the database module	Integrate this module to the main program	See if the way the database is used can be improved
Research methods for the deciding module	Research	Research	Research	Research



**This concludes our
presentation, Thank You**