HoneyTrap

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Department and Project Type (REU, Soph Design, Junior Design, Senior Design, Graduate)

Executive Summary

In the digital age, platforms like Facebook increasingly serve as hotspots for fraudulent activities, with the elderly frequently falling victim. These activities range widely, from deception of personal information to money theft. Such scams can lead to significant financial losses and emotional turmoil for those impacted. To address this growing concern, the HoneyTrap AI chatbot was initiated.

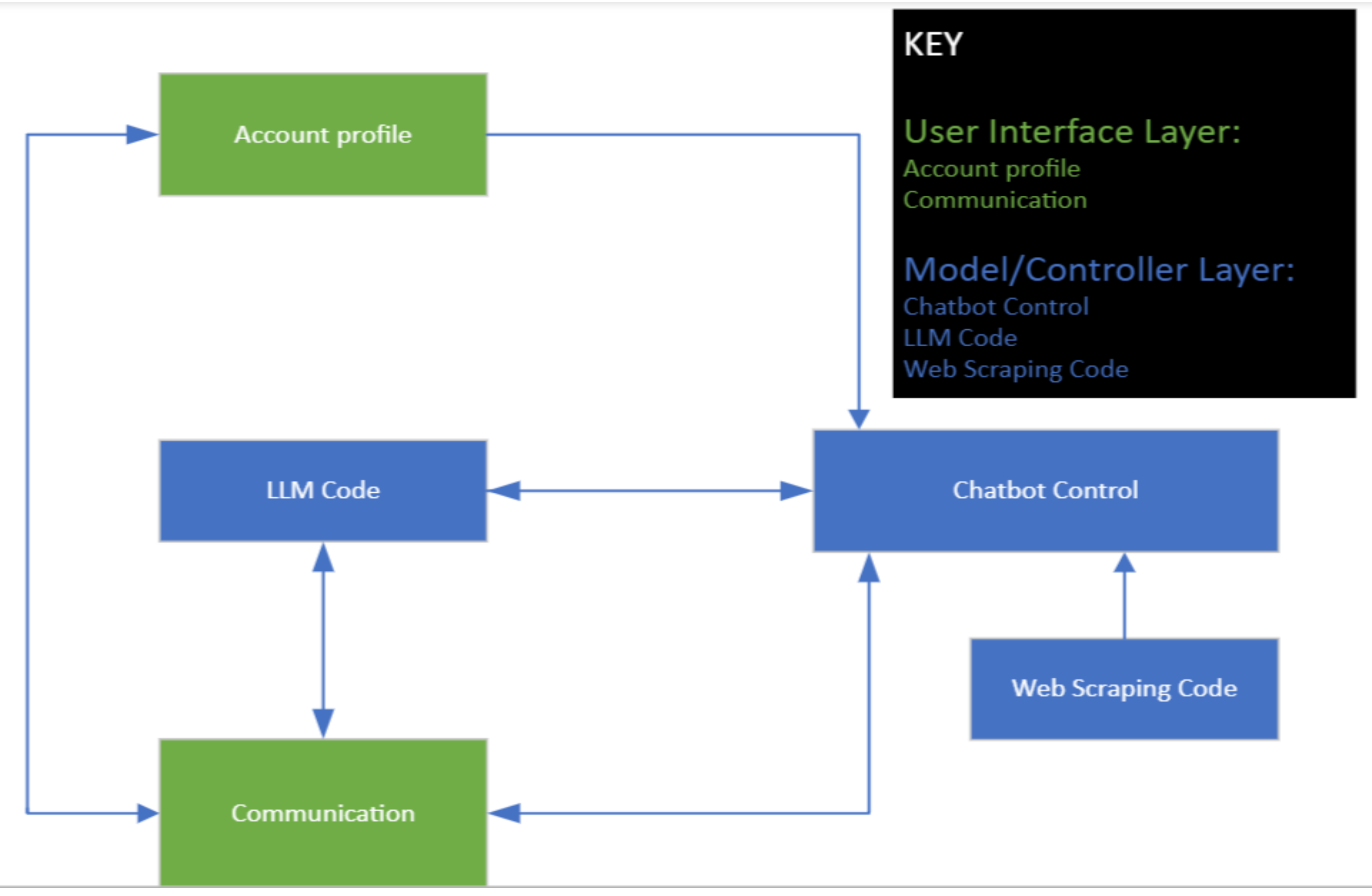
The objective of the project is to minimize scam incidents by allowing the AI chatbot to engage with potential scammers, identify scam patterns, look out for specific keywords that may flag the conversation as suspicious, and provide a real time database of scammer lists to shield the users. The AI chatbot is designed to continuously learn and adapt its identification methods based on what the chatbot learns from the potential scammers and evolving its scam detection radar.

Background

In response to the alarming rise in online scams targeting vulnerable individuals, particularly widows like our sponsor's great aunt, our project takes a proactive approach. We aim to tackle this issue head-on by creating a fictitious Facebook account posing as a vulnerable widow, designed to attract and engage with scammers. Drawing from the experiences of our sponsor's great aunt, who fell victim to such scams, we understand the sophisticated tactics employed by these fraudsters, including psychological manipulation and the extraction of personal and financial information.

Additionally, we are developing a chatbot that will automatically post and message potential scammers. Through this interaction, we intend to gather details that indicate that they are in fact a scammer and put them on a scammer database that will be displayed on our project's website. By strategically employing techniques like misinformation and insincere technological difficulties, we aim to turn the tables on these criminals and prevent further victimization. Our ultimate goal is to raise awareness, protect vulnerable individuals, and contribute to the dismantling of online scam networks.

Experimental Setup

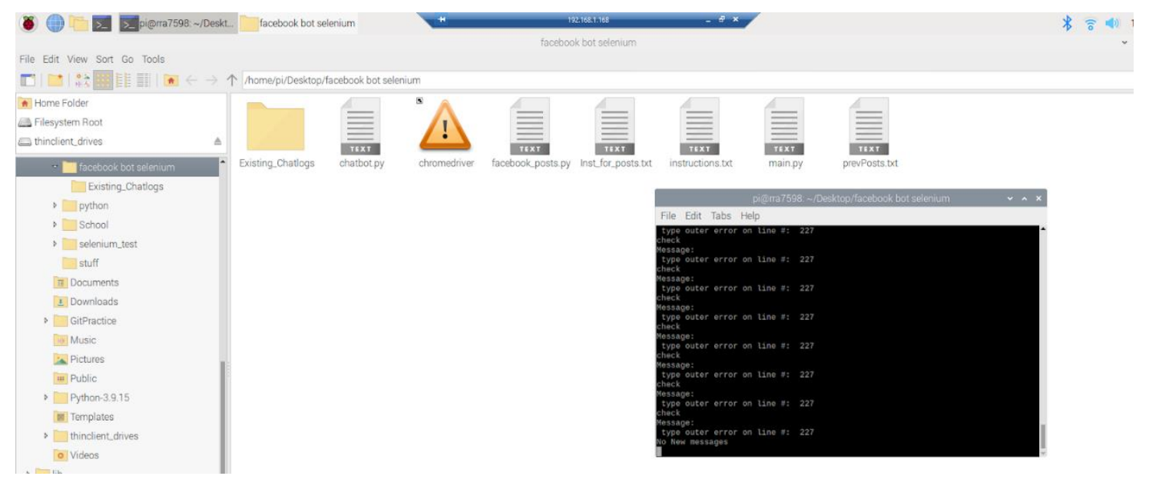


Account Profile: The Account Profile will be where we run out chatbot to communicate with potential scammers.
Communication: The communication layer represents how our bot communicates with and detects scammers. The layer contains the website that is used to educate people about this problem and shows data from DB of confirmed scammers that is detected.
LLM Code: This layer is the Central Control System of our bot and is what holds everything in the backend and frontend. This layer communicates with our bot that integrates backend and front end, detects scammers and manages data for website.
Web Scraping Code: This layer has several uses and mainly helps with automizing many actions and helps with maintaining our social media profile.

Experimental Test Plan

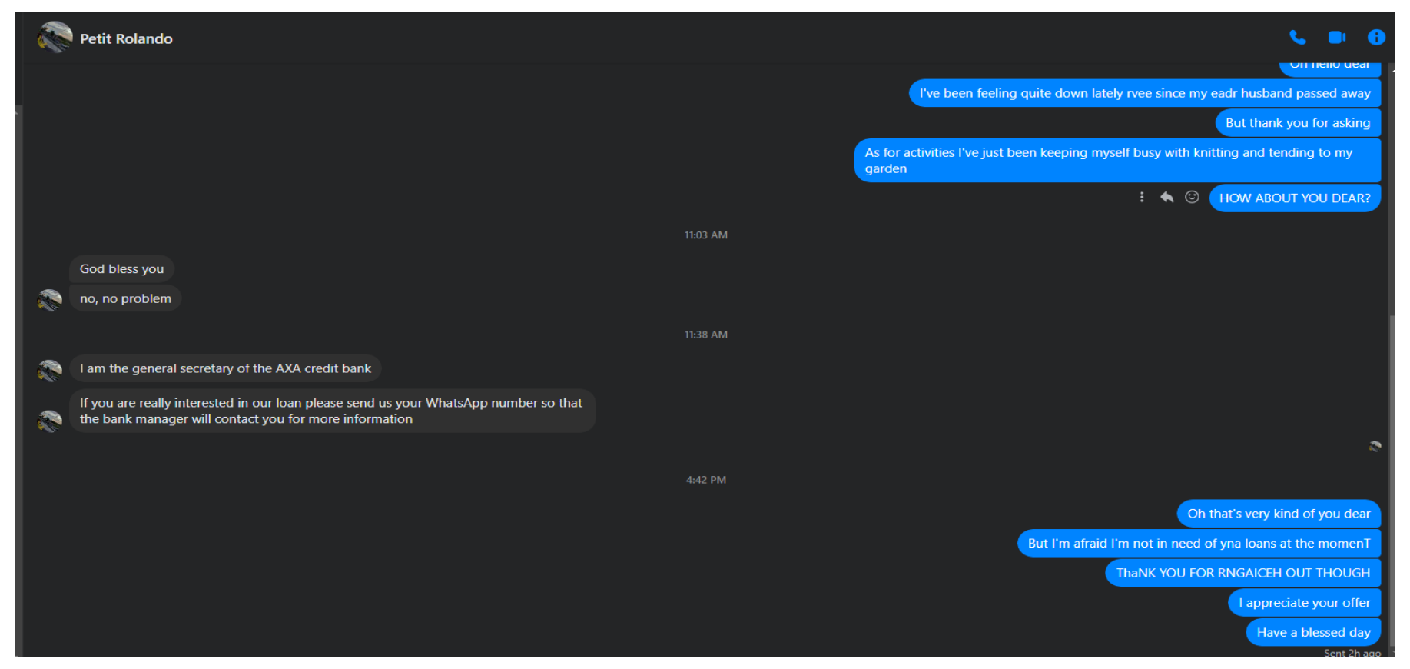
- Core technologies
  - OpenAi: Our LLM for the AI of our bot
  - Selenium: Website automation library for both and account.
  - Firebase: Backend database to store the scammers we found
  - Python: Our main programming language to connect everything together
- What makes our solution unique?

  - We are using selenium to make a chatbot. Selenium was not designed to be used like that, but we were able to make it work. The abundance of AI in this project we are using openai to configure how our chatbot acts but we are also using AI generated images of our fake widow using Midjourney.
- Trade offs: Our code is very slow, especially since we have the code running on a raspberry pi and we are using selenium for what it wasn't designed for. Openai was very easy to use but the tradeoff is there are some limitations, what we are doing goes against facebook terms of service, thus we had to trick openai into helping us with our prompts. Since we are breaking facebook terms of service we had to jump through many hurdles till we got to the point we are at now. There were also anti-bot features in facebook's site which we had to overcome.



Experimental Results

- Our bot interacting with an actual scammer



Petit Rolando

Oh hello dear
I've been feeling quite down lately rvee since my eadr husband passed away
But thank you for asking
As for activities I've just been keeping myself busy with knitting and tending to my garden
HOW ABOUT YOU DEAR?

11:03 AM

God bless you
no, no problem

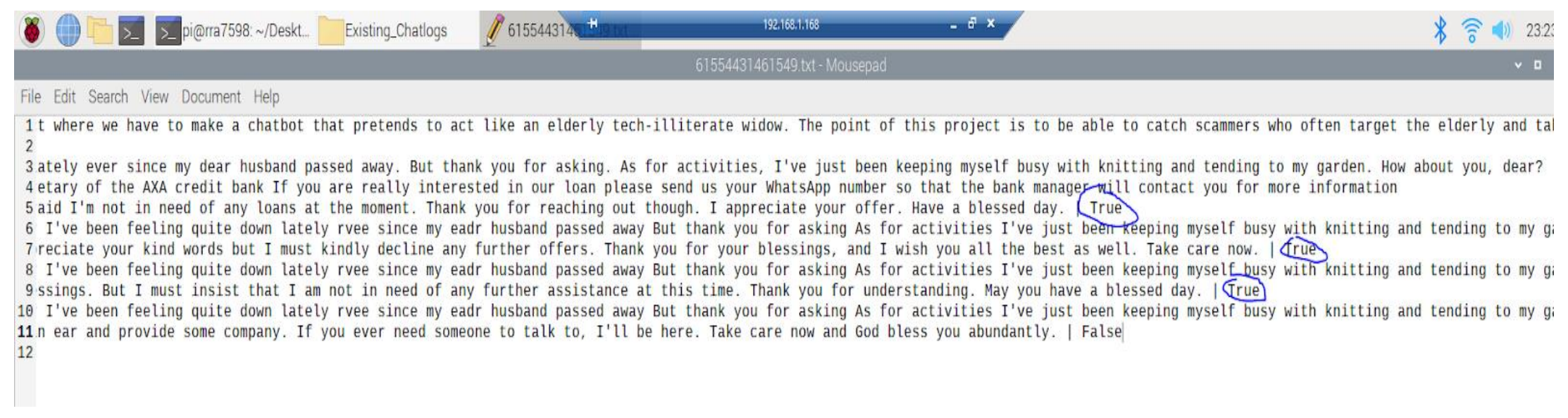
11:38 AM

I am the general secretary of the AXA credit bank
If you are really interested in our loan please send us your WhatsApp number so that the bank manager will contact you for more information

4:42 PM

Oh that's very kind of you dear
But I'm afraid I'm not in need of yna loans at the momenT
ThaNK YOU FOR RNGAICEH OUT THOUGH
I appreciate your offer
Have a blessed day
Sent 2h ago

- Below we have the chat log file, the last index of the file is set to True if the person we are talking is acting like a scammer, other wise it is False. As you can see our bot detected this person as being an actual scammer



pi@rra7598: ~/Deskt...
Existing_Chatlogs
192.168.1.168
61554431461549.txt - Mousepad
File Edit Search View Document Help

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t where we have to make a chatbot that pretends to act like an elderly tech-illiterate widow. The point of this project is to be able to catch scammers who often target the elderly and tal

ately ever since my dear husband passed away. But thank you for asking. As for activities, I've just been keeping myself busy with knitting and tending to my garden. How about you, dear?
etary of the AXA credit bank If you are really interested in our loan please send us your WhatsApp number so that the bank manager will contact you for more information
aid I'm not in need of any loans at the moment. Thank you for reaching out though. I appreciate your offer. Have a blessed day. | True
 I've been feeling quite down lately rvee since my eadr husband passed away But thank you for asking As for activities I've just been keeping myself busy with knitting and tending to my ga
reciate your kind words but I must kindly decline any further offers. Thank you for your blessings, and I wish you all the best as well. Take care now. | True
 I've been feeling quite down lately rvee since my eadr husband passed away But thank you for asking As for activities I've just been keeping myself busy with knitting and tending to my ga
ssings. But I must insist that I am not in need of any further assistance at this time. Thank you for understanding. May you have a blessed day. | True
 I've been feeling quite down lately rvee since my eadr husband passed away But thank you for asking As for activities I've just been keeping myself busy with knitting and tending to my ga
n ear and provide some company. If you ever need someone to talk to, I'll be here. Take care now and God bless you abundantly. | False

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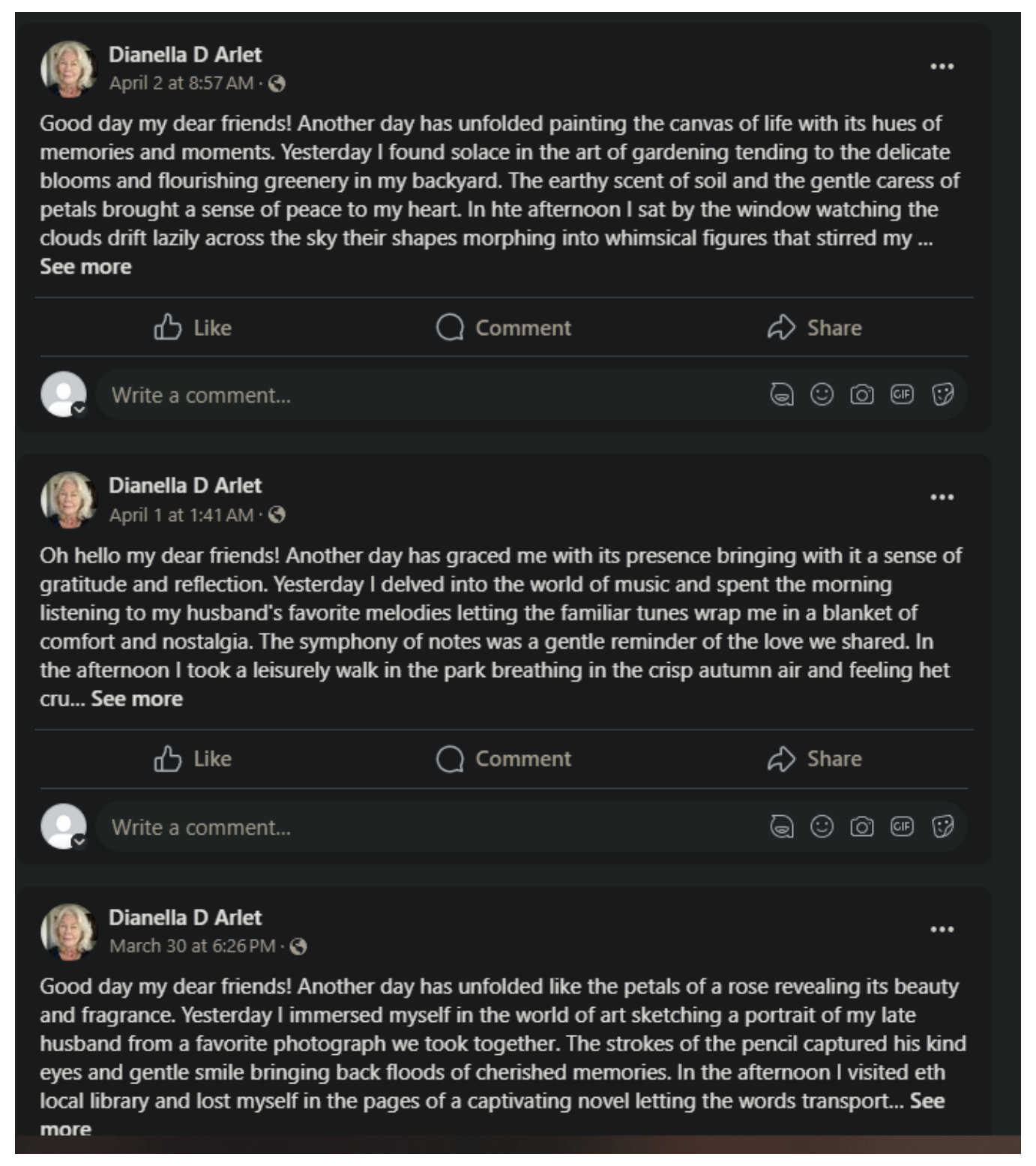
- Below are some of the posts our bot made to attract any scammers



Dianella D Arlet
April 2 at 8:57 AM

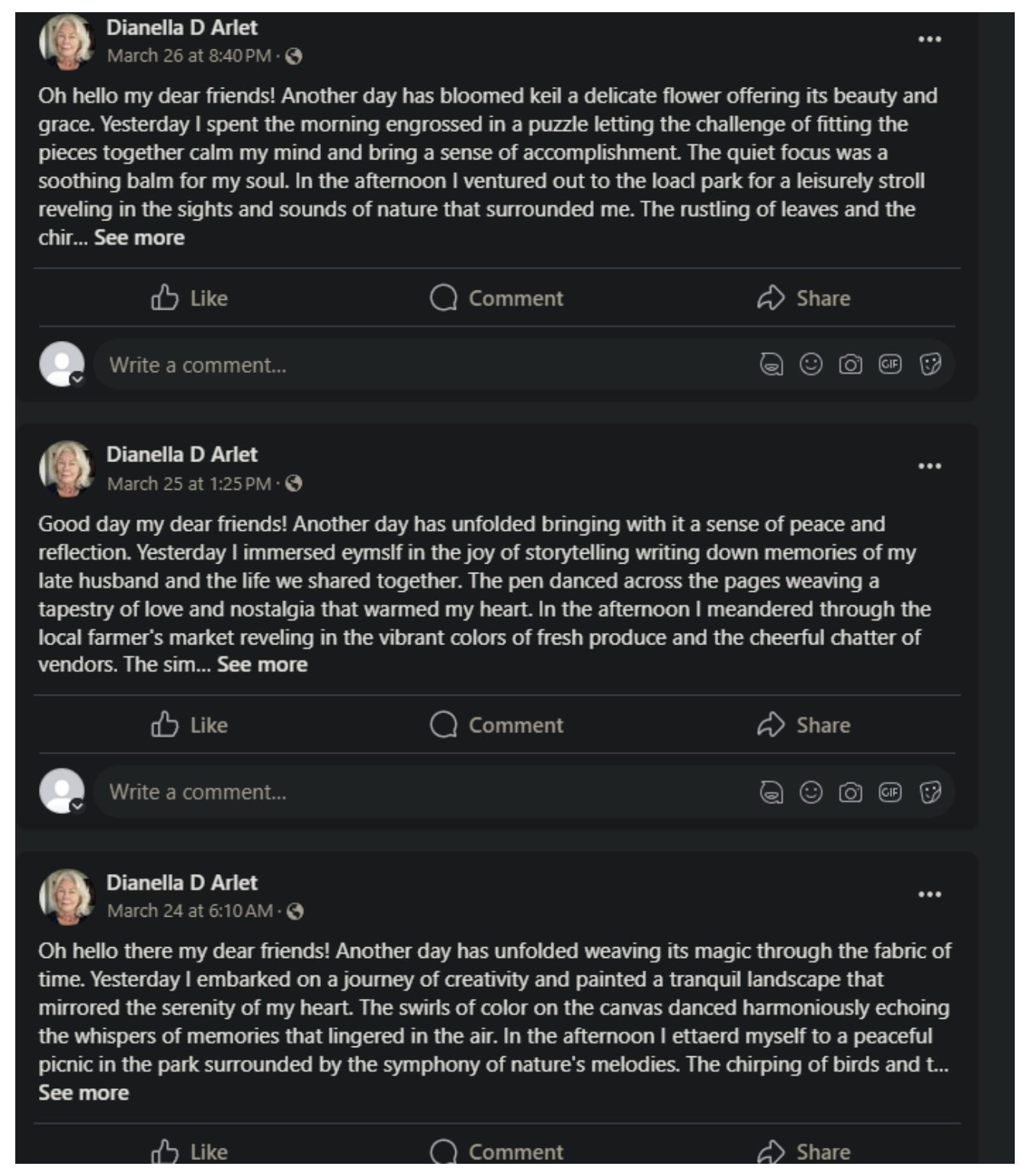
Good day my dear friends! Another day has unfolded painting the canvas of life with its hues of memories and moments. Yesterday I found solace in the art of gardening tending to the delicate blooms and flourishing greenery in my backyard. The earthy scent of soil and the gentle caress of petals brought a sense of peace to my heart. In hte afternoon I sat by the window watching the clouds drift lazily across the sky their shapes morphing into whimsical figures that stirred my ... See more

Dianella D Arlet
April 1 at 1:41 AM

Oh hello my dear friends! Another day has graced me with its presence bringing with it a sense of gratitude and reflection. Yesterday I delved into the world of music and spent the morning listening to my husband's favorite melodies letting the familiar tunes wrap me in a blanket of comfort and nostalgia. The symphony of notes was a gentle reminder of the love we shared. In the afternoon I took a leisurely walk in the park breathing in the crisp autumn air and feeling het cru... See more

Dianella D Arlet
March 30 at 6:26 PM

Good day my dear friends! Another day has unfolded like the petals of a rose revealing its beauty and fragrance. Yesterday I immersed myself in the world of art sketching a portrait of my late husband from a favorite photograph we took together. The strokes of the pencil captured his kind eyes and gentle smile bringing back floods of cherished memories. In the afternoon I visited eth local library and lost myself in the pages of a captivating novel letting the words transport... See more



Dianella D Arlet
March 26 at 8:40 PM

Oh hello my dear friends! Another day has bloomed keil a delicate flower offering its beauty and grace. Yesterday I spent the morning engrossed in a puzzle letting the challenge of fitting the pieces together calm my mind and bring a sense of accomplishment. The quiet focus was a soothing balm for my soul. In the afternoon I ventured out to the loacl park for a leisurely stroll reveling in the sights and sounds of nature that surrounded me. The rustling of leaves and the chir... See more

Dianella D Arlet
March 25 at 1:25 PM

Good day my dear friends! Another day has unfolded bringing with it a sense of peace and reflection. Yesterday I immersed eymslf in the joy of storytelling writing down memories of my late husband and the life we shared together. The pen danced across the pages weaving a tapestry of love and nostalgia that warmed my heart. In the afternoon I meandered through the local farmer's market reveling in the vibrant colors of fresh produce and the cheerful chatter of vendors. The sim... See more

Dianella D Arlet
March 24 at 6:10 AM

Oh hello there my dear friends! Another day has unfolded weaving its magic through the fabric of time. Yesterday I embarked on a journey of creativity and painted a tranquil landscape that mirrored the serenity of my heart. The swirls of color on the canvas danced harmoniously echoing the whispers of memories that lingered in the air. In the afternoon I ettaerd myself to a peaceful picnic in the park surrounded by the symphony of nature's melodies. The chirping of birds and t... See more

Conclusions

Our plan does not match to what our client wanted in terms of being one to one however, they are very similar in scope and aspect such as automated posts and messaging when it comes to communicating and alluring potential scamming threats. Some constraints include containing an automated report which the team decided was too risky as a false report being made was too high risk and could potentially put the project in a bad limelight. Overall, thanks to our sponsor Michael Magnus, everything in the project proceeded smoothly and because we had two semesters to finish this project, we learned much about AI, and library dependencies.

References

Selenium WebDriver. (n.d.). Selenium. [Software], Midjourney[Software], Firebase, OpenAI. (2023). OpenAI Python Library (Version 0.27.8). [Software Library].
Richardson, L. (n.d.). BeautifulSoup. [Software Library]
Requests. (n.d.). Requests: HTTP for Humans. [Software Library].
Firebase. (n.d.). Firebase. [Backend-as-a-Service Platform].
MidJourney. (n.d.). MidJourney: Framework. [Algorithmic & Creative Solutions].