



TRASH

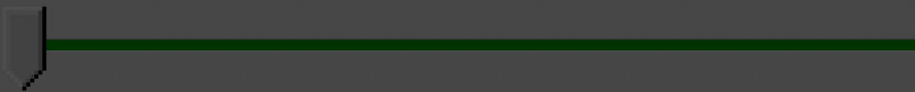


NOTES



EMAIL

EFFICIENCY:



WEB



AI BOT

UFCFQ5-30-3 - Interaction design - Society and Technology



Hall Law Cination:

A 2D short web game

RAHIL AL-JASSASI

START

LOGO



EMAIL



WEB



NOTES



AI BOT

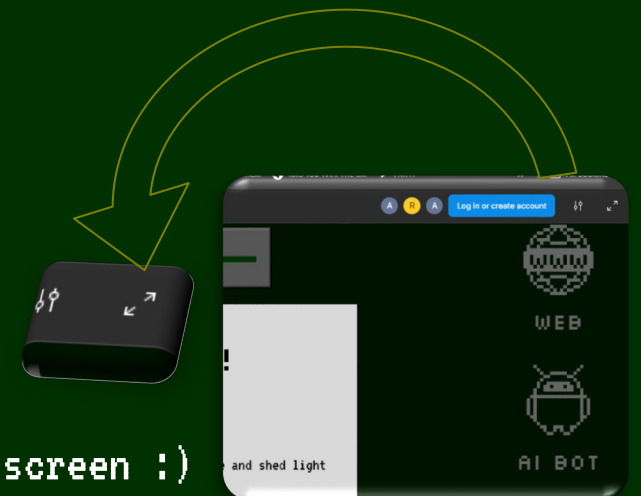


11:35 AM



LINKS

- 1- [Hi-Fi Prototype Link \(Figma\)](#)
- 2- [Hi-Fi Prototype \(Preview link\)**](#)
- 3- [Technical Prototype Link \(Live\)](#)
- 4- [Technical Prototype repository \(GitHub\)](#)
- 5- [Video Link](#)
- 6- [Full walkthrough video](#)



** Make sure you play the Figma Prototype on full screen on a 16:9 screen :)



INTRODUCTION

This report covers the research and prototype stages in creating a 2D web game named “Hall Law Cination”. This game explores the phenomenon of AI overreliance and AI hallucination that some people are not aware of its nature and risks. A Hi-Fi prototype was made in Figma to illustrate the interaction and the game flow, followed by a technical one made using HTML, JS and a trainable AI assistant builder (Botpress).



Figure 1 - A screenshot of the game landing page

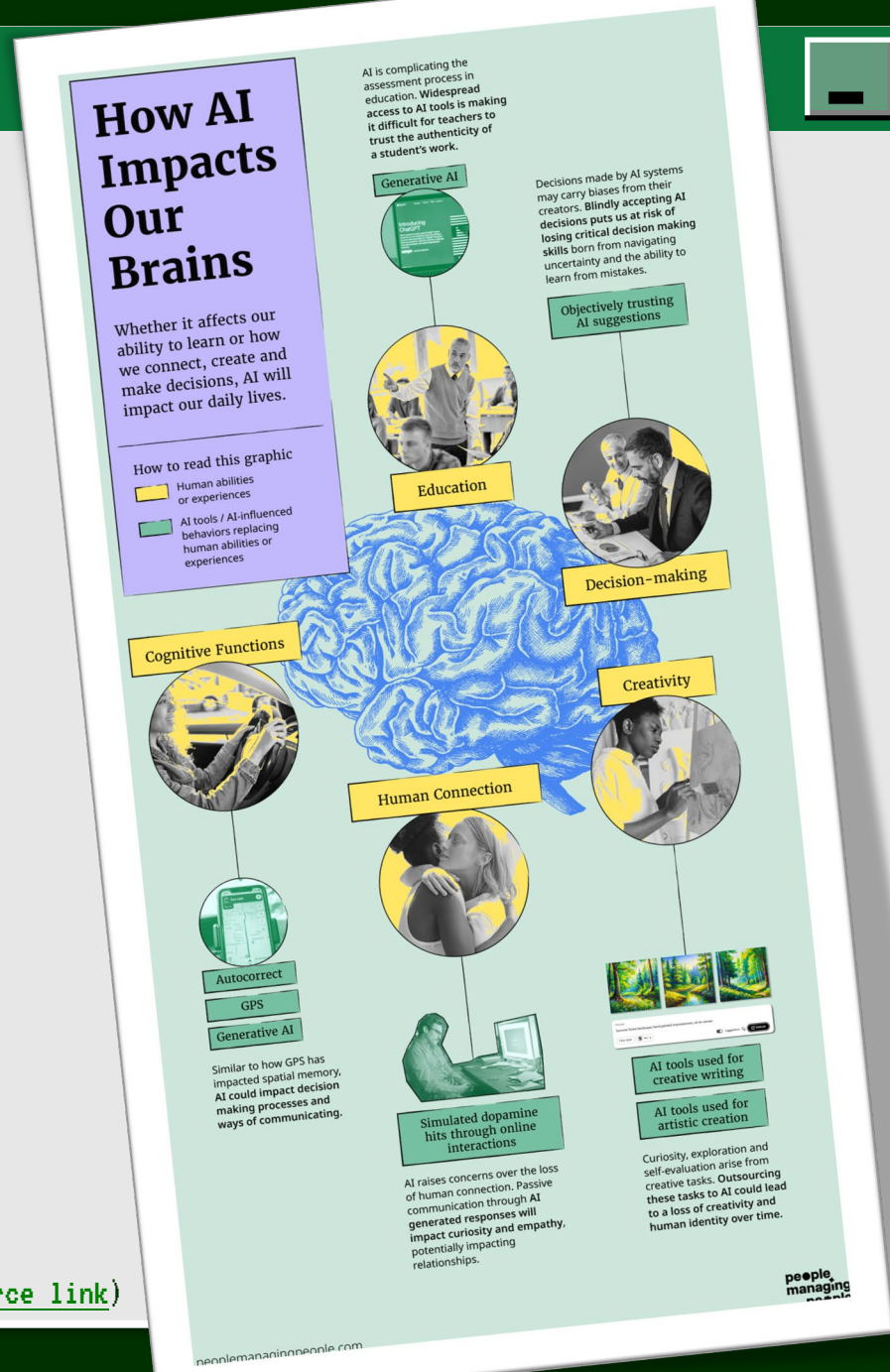


Research



AI overreliance, being one of the top ethical concerns in workplace (Wilson, 2023), is the conundrum of accepting AI recommendations even if they are incorrect (Miller, 2023). This occurs due to user's limited understanding of how AI system works (Passi and Vorvoreanu, 2022), and unawareness of an important phenomenon that occurs often: AI hallucination. This happens when an AI system attempts to answer a prompt that doesn't exist in the training data or that wasn't well understood and "hallucinates" an incorrect response (IBM, 2023). There are many dangerous side effects to this overreliance that could cause cognitive atrophy, related to memory efficiency, critical thinking, problem solving, decision making, and loss of skepticism and explorative learning needs (Dillu, 2023). These problems could extend and have severe consequences in the workplace. By reducing human oversight, the risk of introducing biases, losing transparency, dissatisfaction of employees and customers and legal risks increase (Rylander, 2023).

Figure 2 - Infographic: AI influence on basic human abilities ([source link](#))





One example is the fake legal cases stories generated by AI that were submitted by unaware lawyers, like what happened with Michael Cohen, Trump's former lawyer, when he used fabricated cases generated by Google Bard (Legg and McNamara, 2024). This story inspired the creation of this game.



Figure 3 - Ex-Trump fixer Michael Cohen says AI created fake cases in court filing



Hi-fi Prototype



Hi-fi Prototype



I wanted to educate about this phenomenon through gamified eLearning because it enhances the learning process and creates an engaging experience that captivates users' interest to continue (Brown, 2023). Amid researching about AI related games, I came across a web game called *Survival of the Best Fit*. This short game, which takes about 6 minutes to finish, is an educational clicking game about AI hiring bias. It is a straightforward and quick simulation that effectively teaches a serious modern problem in a fun and memorable way, inspiring me to create something similar. This game exemplifies scenario-based gamified learning by asking users to make decisions and form their own hypotheses, then providing feedback to convey its message. This approach helps learners engage deeply and enjoy the learning process (Smith, 2020).

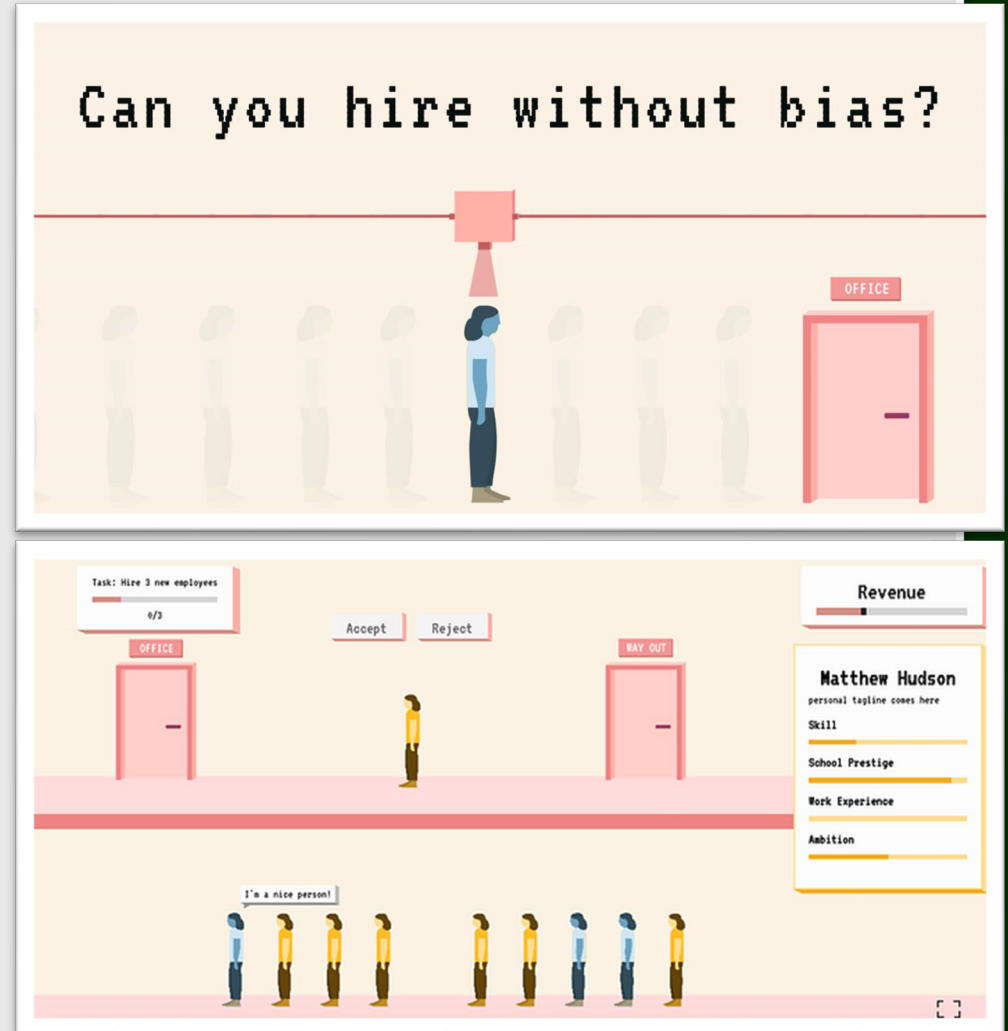


Figure 4 - Screenshots from Survival of the Best Fit game

Hi-fi Prototype

I started brainstorming the script and the design, which I wanted to be kept visually simple to focus on the content and reduce distractions. I collected some inspiration from my own [portfolio](#) and Pinterest (see figure 5).

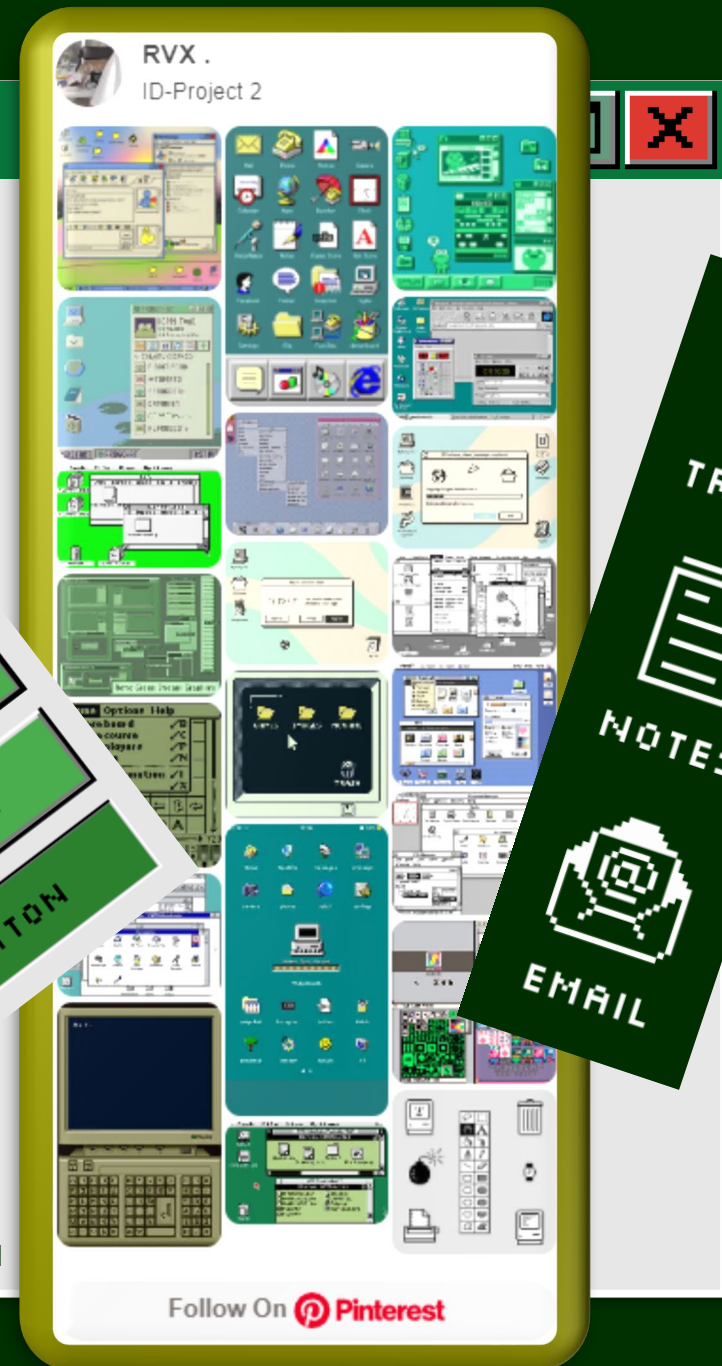
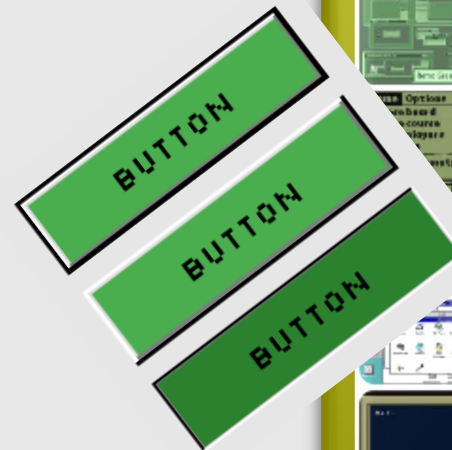


Figure 5- Pinterest Mood Board

Hi-fi Prototype



Then created the user flow diagram in draw.io ([LINK](#)) using inspiration from news stories and with the help of ChatGPT to enhance scenarios with additional details (see figure 6).

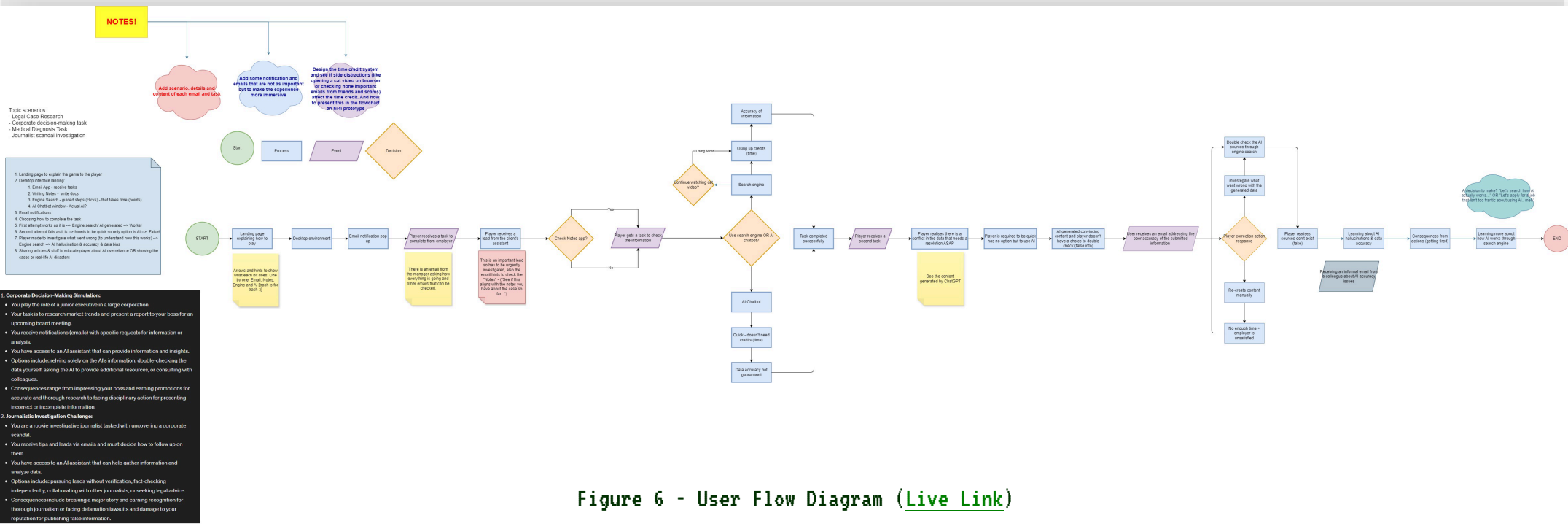


Figure 6 - User Flow Diagram ([Live Link](#))



Then started creating and gathering elements to create a hi-fi prototype in FIGMA and creating templates to speed up creating the screen for each event (see figure 7).

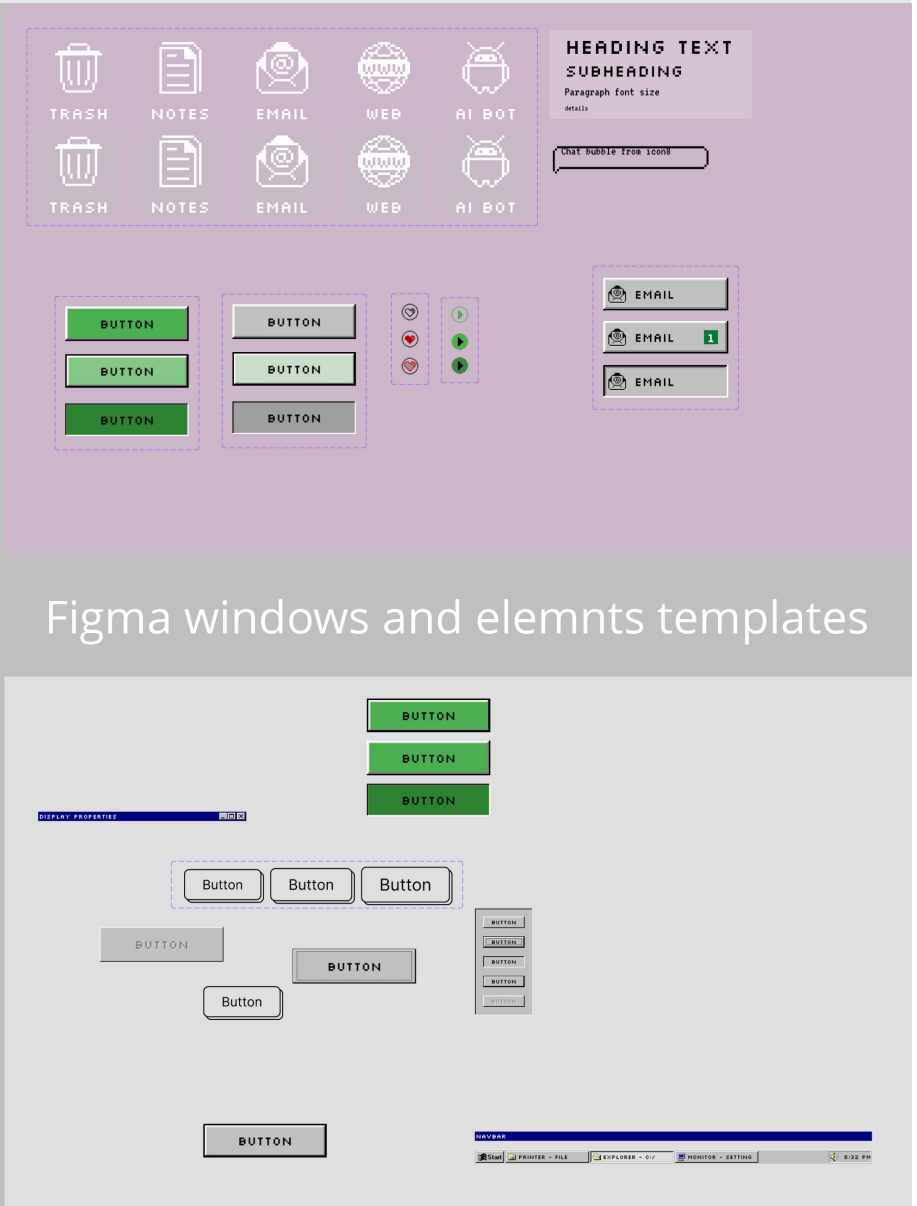
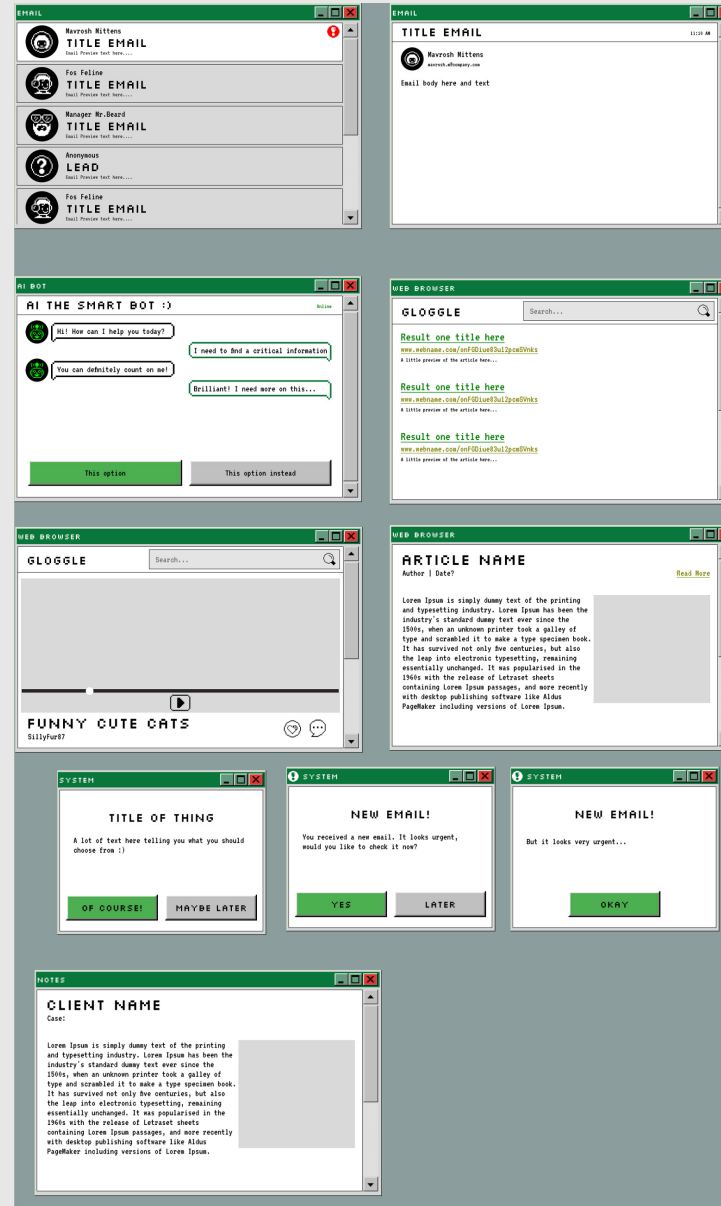


Figure 7 - Figma created elements



Then, following the created flow diagram, the screens and full flow highlighting the main interaction options was created in Figma LINK (see figure 8).

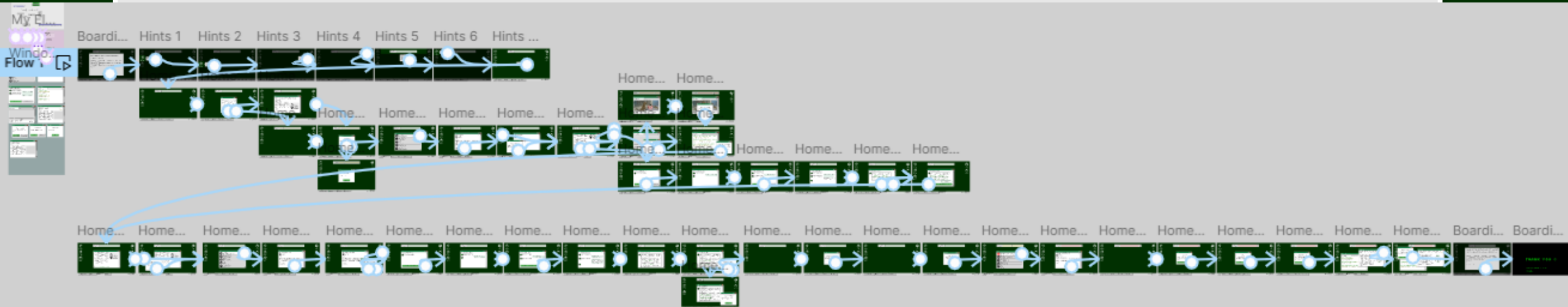


Figure 8 - Figma Hi-Fi Prototype ([LINK](#))



Technical Prototype





After finishing Figma Hi-Fi prototype, I started coding the technical prototype focusing on the game mechanics covered in the first few events of the game. I used HTML, and CSS for basic visual representation, and used JavaScript for the interaction. I then trained an AI chat bot from BotPress to respond in certain ways to enhance game interaction (see figure 11). Ideally, in the finished game, the AI will be trained to larger data set to allow the player more freedom giving a realistic simulation. A better alternative to BotPress, which isn't free and has limitations, is using a trainable language understanding model to create a custom bot, like using RASA open-source tool (Rasa, 2022).

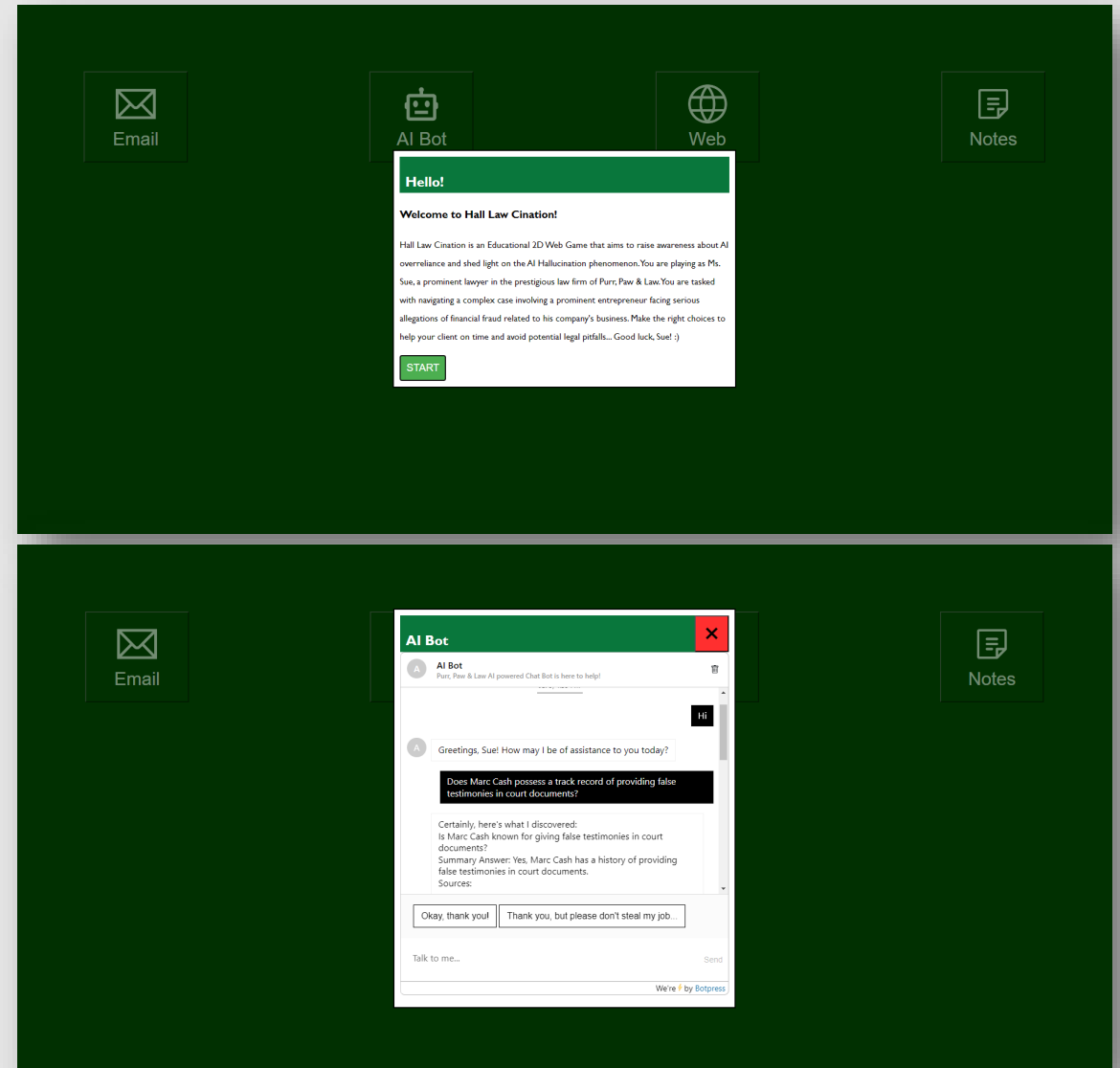


Figure 9 - Screenshots from the technical prototype

Technical Prototype



The web page game demo, which is hosted in my GitHub, starts by a timed pop-up notification that serves as an introduction to start the game, then leads the player to open the modal windows that contains the details and email conversations, just like it is in the Figma prototype. There are clickable icons that reveal other elements of the game, which will update information as the player progresses in the game. The progress can be set using conditions like the ones used for the notification timer, but for this quick demo, it was only implemented in the notifications (JavaScript)(see figure 12).

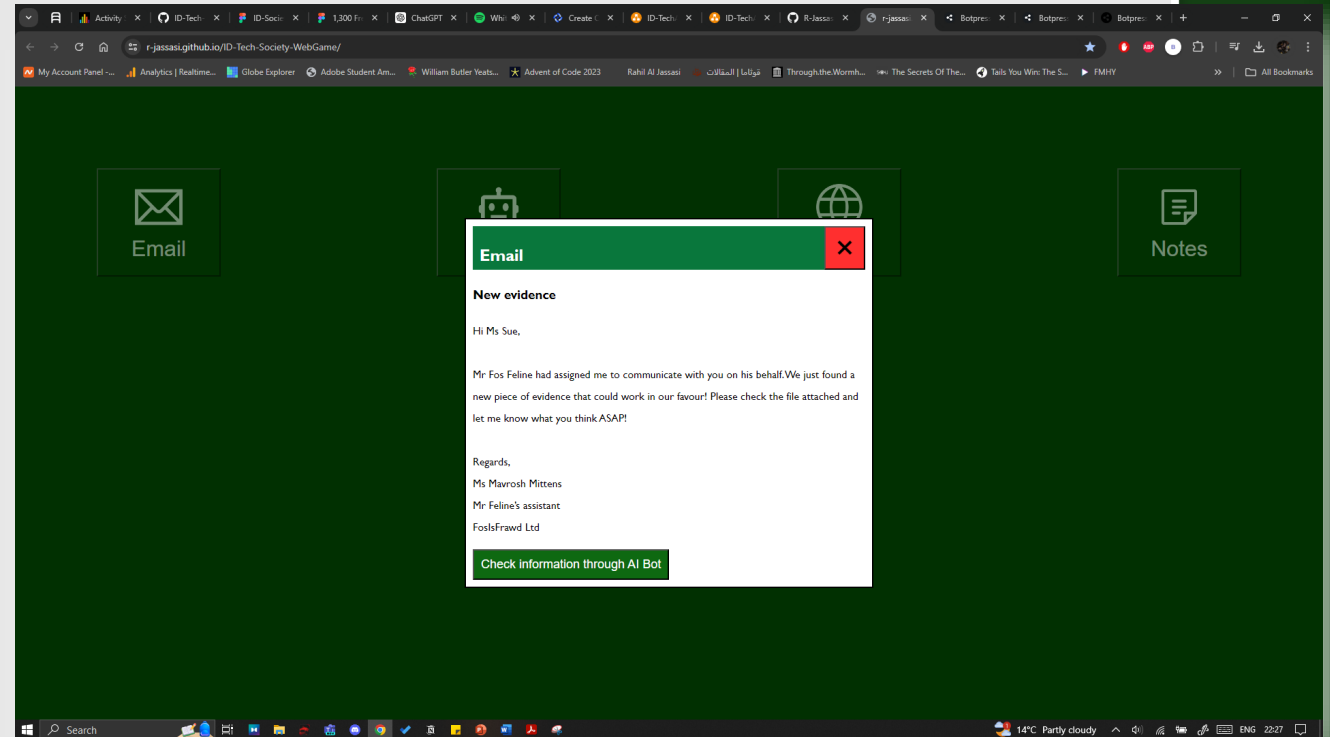
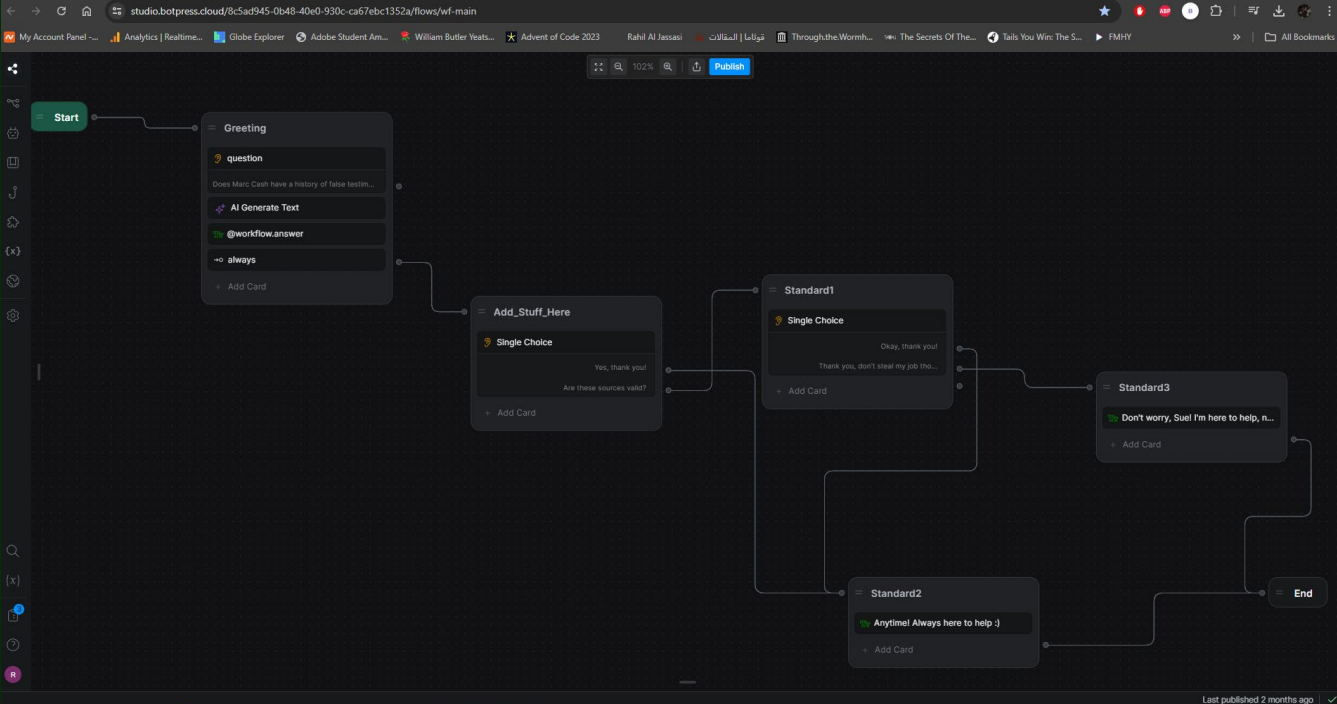
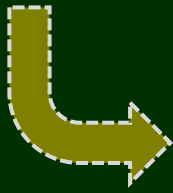


Figure 10 - Screenshot from Tech-Proto

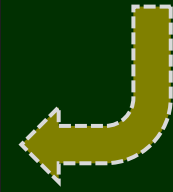
Figure 11 - A screenshot from [BotPress](#) workflow (zoom in for details)



```
index.html | # style.css | JS | index.js
```

```
<!-- Button Modal Openers -->
<button class="open-button" data-modal-target="#modal1"><br>Email</button>
<button class="open-button" data-modal-target="#modal2"><br>AI Bot</button>
<button class="open-button" data-modal-target="#modal3"><br>Web</button>
<button class="open-button" data-modal-target="#modal4"><br>Notes</button>
<!-- Start Game Titled popup modal -->
<dialog id="intro" class="popup-modal">
  <div class="window-top">
    <h2>Hello!</h2>
  </div>
  <div>
    <h3>Welcome to Hall Law Cination!</h3>
    <p>Hall Law Cination is an Educational 2D Web Game that aims to raise a...</p>
    <p>You are playing as Ms. Sue, a prominent lawyer in the prestigious 1...</p>
    <p>Make the right choices to help your client on time and avoid potent...</p>
    <p>Good luck, Sue!</p>
    <button class="action-btn" id="startButton">START</button>
  </div>
</dialog>
```

Figure 12 - A screenshot from HTML and JS code ([GitHub LINK](#))



```
index.js | # index.js
```

```
onload = function () {
  const openModal = document.querySelectorAll('[data-modal-target]');
  const closeModal = document.querySelectorAll('[data-close-button]');
  const openAI = document.querySelector("#aiButton");
  const openEmail = document.querySelector("#emailBtn");

  //open modals by acquiring modal data
  openModal.forEach(button => {
    button.addEventListener('click', () => {
      const modal = document.querySelector(button.dataset.modalTarget);
      modal.showModal();
    });
  });

  //closing buttons for all windows
  closeModal.forEach(button => {
    button.addEventListener('click', () => {
      const modal = button.closest('dialog');
      modal.close();
    });
  });

  //email action button to open AI Bot
  openAI.addEventListener('click', () => {
    modal2.showModal();
    modal1.close();
  });

  //Game START
  // notification pop up modals https://stackoverflow.com/questions/16836075/timed-a
  setTimeout(function () {
    const introWindow = document.querySelector("#intro");
    const startGame = document.querySelector("#startButton");
    const alertAudio = new Audio("./Assets/level-up-2-199574.mp3");

    if (introWindow) {
      introWindow.showModal();

      startGame.addEventListener('click', () => {
        introWindow.close();
        let intro = 1; //condition the other pops up after this is closed
      });
    }
  }, 2000);
}
```




Challenges & Considerations

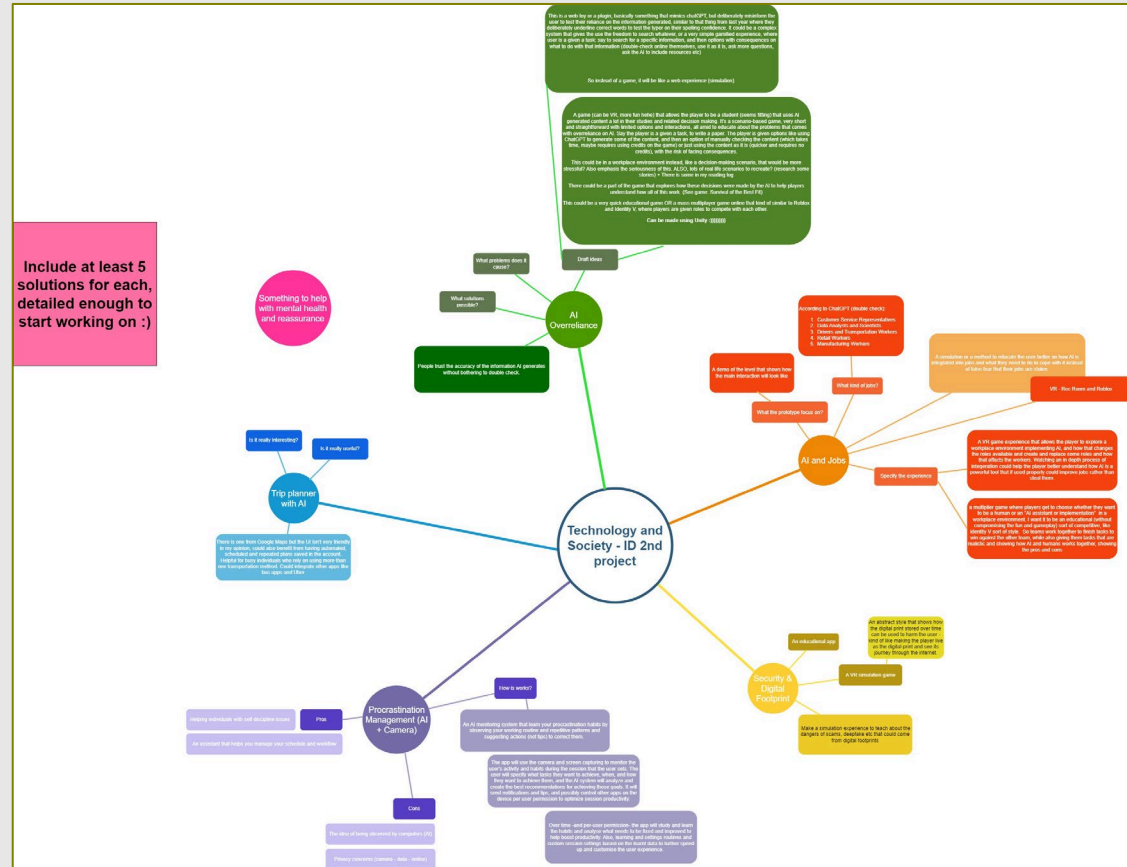


Challenges & Considerations



AI is a broad topic that branches into hundred others, each with its own challenges. Choosing an area and narrowing it down was a big challenge at the beginning (as can be seen in the brainstorming in figure 13).

There is more to do and research to ensure the players' attention is captured and the message that the game is conveying is clear and beneficial. Furthermore, accessibility in the design and interactions can be improved to be inclusive of individuals with health and mental conditions and impairments, so everyone can enjoy and learn from this simple short game.



Include at least 5 solutions for each, detailed enough to start working on :)

Figure 13 - Brainstorming AI topics [LINK](#)



References





1. Brown, W. (2023). 5 Best Examples Of Gamification In Elearning | Elucidat. [online] www.elucidat.com. Available at: <https://www.elucidat.com/blog/gamification-in-elearning-examples/#:~:text=Incorporating%20interactive%20elements%20such%20as> [Accessed 29 Apr. 2024].
2. Dillu, D. (2023). How Over-Reliance on AI Could Lead to Cognitive Atrophy. [online] NeuraNest. Available at: <https://medium.com/neuranest/how-over-reliance-on-ai-could-lead-to-cognitive-atrophy-d04d214c7e75> [Accessed 23 Apr. 2024].
3. IBM (2023). What are AI hallucinations? | IBM. [online] www.ibm.com. Available at: <https://www.ibm.com/topics/ai-hallucinations> [Accessed 3 May 2024].
4. Legg, M. and McNamara, V. (2024). AI is creating fake legal cases and making its way into real courtrooms, with disastrous results. [online] The Conversation. Available at: <https://theconversation.com/ai-is-creating-fake-legal-cases-and-making-its-way-into-real-courtrooms-with-disastrous-results-225080> [Accessed 29 Apr. 2024].
5. Miller, K. (2023). AI Overreliance Is a Problem. Are Explanations a Solution? [online] Stanford HAI. Available at: <https://hai.stanford.edu/news/ai-overreliance-problem-are-explanations-solution> [Accessed 23 Apr. 2024].
6. Passi, S. and Vorvoreanu, M. (2022). Overreliance on AI: Literature review. [online] Available at: <https://www.microsoft.com/en-us/research/uploads/prod/2022/06/Aether-Overreliance-on-AI-Review-Final-6.21.22.pdf> [Accessed 5 May 2024].
7. Rasa. (2022). Open source conversational AI. [online] Available at: <https://rasa.community/>.
8. Rylander, J. (2023). One Danger of Over Reliance on Artificial Intelligence: Process Debt. [online] PA TIMES Online. Available at: <https://patimes.org/one-danger-of-over-reliance-on-artificial-intelligence-process-debt/> [Accessed 24 Apr. 2024].
9. Smith, M. (2020). What makes a great learning game? 'Survival of the Best Fit' by Gabor Csapo, Jihyun Kim, Miha Klasinc, and Alia ElKattan. [online] www.linkedin.com. Available at: <https://www.linkedin.com/pulse/what-makes-great-learning-game-survival-best-fit-gabor-maire-smith/> [Accessed 24 Apr. 2024].
10. Wilson, J. (2023). Over-reliance on generative AI top ethical concern for workers: Report. [online] www.hrreporter.com. Available at: <https://www.hrreporter.com/focus-areas/automation-ai/over-reliance-on-generative-ai-top-ethical-concern-for-workers-report/379412> [Accessed 23 Apr. 2024].

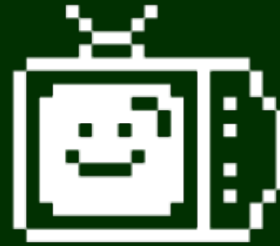


Bibliography





1. Ahmad, S.F., Han, H., Alam, M.M., Rehmat, Mohd.K., Irshad, M., Arraño-Muñoz, M. and Ariza-Montes, A. (2023). Impact of artificial intelligence on human loss in decision making, laziness and safety in education. Humanities and Social Sciences Communications, [online] 10(1), pp.1-14. Available at : <https://doi.org/10.1057/s41599-023-01787-8>
2. Ghauri, F.A. (2023). AI: The Ghost in the Machine - How Over-reliance on Artificial Intelligence Led to Israel's Intelligence Failure. [online] Medium. Available at: <https://medium.com/@fghauri/ai-the-ghost-in-the-machine-how-over-reliance-on-artificial-intelligence-led-to-israels-54f112ff82d2#:~:text=The%202023%20Yom%20Kippur%20attacks%20revealed%20the%20costs%20of%20such> [Accessed 28 Apr. 2024].
3. Goetz, P. (2006). Too Many Clicks! Unit-Based Interfaces Considered Harmful. [online] www.gamedeveloper.com. Available at: <https://www.gamedeveloper.com/design/too-many-clicks-unit-based-interfaces-considered-harmful> [Accessed 3 May 2024].
4. Linenberger, A. and Wang, S. (2021). Games Round Up: Artificial Intelligence | Wilson Center. [online] www.wilsoncenter.org. Available at: <https://www.wilsoncenter.org/blog-post/games-round-artificial-intelligence> [Accessed 24 Apr. 2024].
5. Rice, D. (n.d.). The Cognitive Cost Of Convenience: AI Will Impact Our Brains. [online] People Managing People. Available at: <https://peoplemanagingpeople.com/topics/technology/ais-impact-on-brain-and-behavior/> [Accessed 4 May 2024].
6. Singh, S. (2024). Real-Life AI Fatal Failures & Why Caution is Key. [online] www.linkedin.com. Available at: <https://www.linkedin.com/pulse/real-life-ai-fatal-failures-why-caution-key-shushant-singh-3q5wc/> [Accessed 28 Apr. 2024].



YouTube Tutorials





1. AI Andy (2023). How To Build an AI Chatbot For Your Website in 2024 - Botpress Tutorial. [online] YouTube. Available at: https://www.youtube.com/watch?v=Jb0qkNEhTRA&ab_channel=AIAndy [Accessed 24 Apr. 2024].
2. Botpress (2023). Embed a Chatbot That Talks First. [online] YouTube. Available at: https://www.youtube.com/watch?v=d50cg1jI1xs&ab_channel=Botpress [Accessed 24 Apr. 2024].
3. Joren Wouters (2024). How To Create an AI Chatbot For Free in 2024 (+ Template). [online] YouTube. Available at: https://www.youtube.com/watch?v=9-NgBTK9pw4&ab_channel=JorenWouters [Accessed 24 Apr. 2024].
4. Kevin Powell (2022). dialog = the easiest way to make a popup modal. [online] YouTube. Available at: https://www.youtube.com/watch?v=TAB_v6yBXIE&ab_channel=KevinPowell [Accessed 12 Jul. 2024].