

---

RESEARCH PRESENTATION:

**EVOLUTION OF TECHNOLOGY**

Luis G. B. A. Faria

Student ID A00187785

Human-Centred Design

Prof Dr. Omid Haas



# Artificial Intelligence RECOMMENDATION SYSTEMS

**Moral and Ethical Impact  
& Immediate Effects on  
Human Knowledge**

**October, 2025**

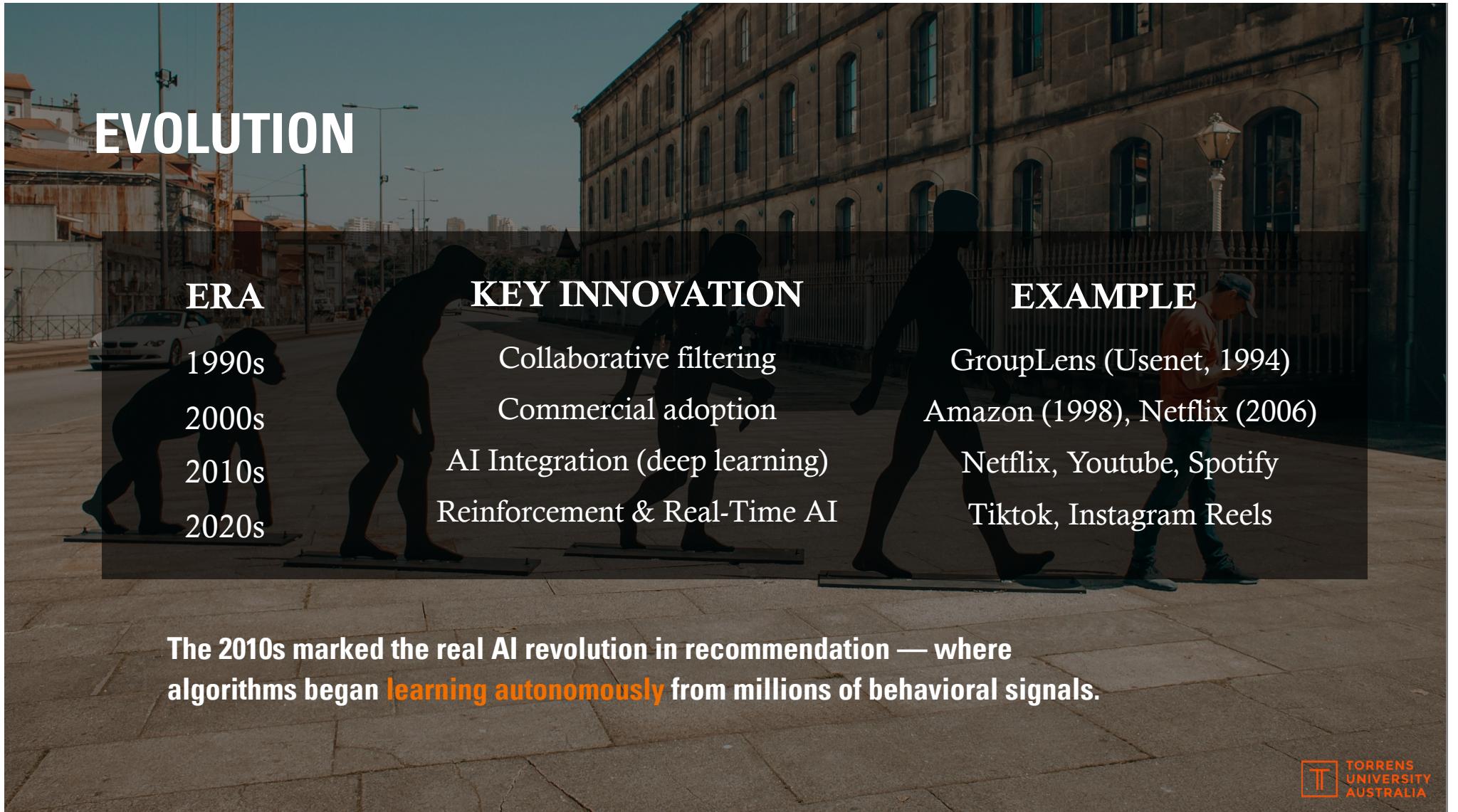


# CONTEXT

## What are **AI Recommender Systems**?

- Machine Learning Algorithms → Personalize content feeds
- Use user data (watch time, themes, likes, comments) → optimize predictions
  - Accessibility: simplifies discovery, removes need to search





# ANALYSIS

## Design

*Human-Centered*

- **Norman's Principles:**
  - visibility (clear feedback in feed),
  - mapping (scroll = next video),
  - feedback (likes/views).
- **Affordances abused:**
  - infinite scroll becomes addictive.
- **Gee's Guidelines:**
  - stimulation yes, but ergonomics & wellbeing ignored.

## Moral

*Wellbeing & Addiction*

- Evidence: Problematic TikTok Use (validated scales).
- Short-form linked to attention reduction.
- WHO: sedentary guidelines → higher screen time = obesity/health risks.

## Ethical

*Governance & Data*

- EU fines for data/privacy violations.
- Algorithm opacity → filter bubbles, misinformation.
- Global bans on government devices = trust issue.

## IMMEDIATE EFFECTS

CAUSE | EFFECT

- 1B+ adoption: content discovery without search.
- Changed knowledge flows: “micro-learning” formats.
- Industry response: IG Reels, YT Shorts - all adopted the tech.



# SOCIETAL SHIFTS

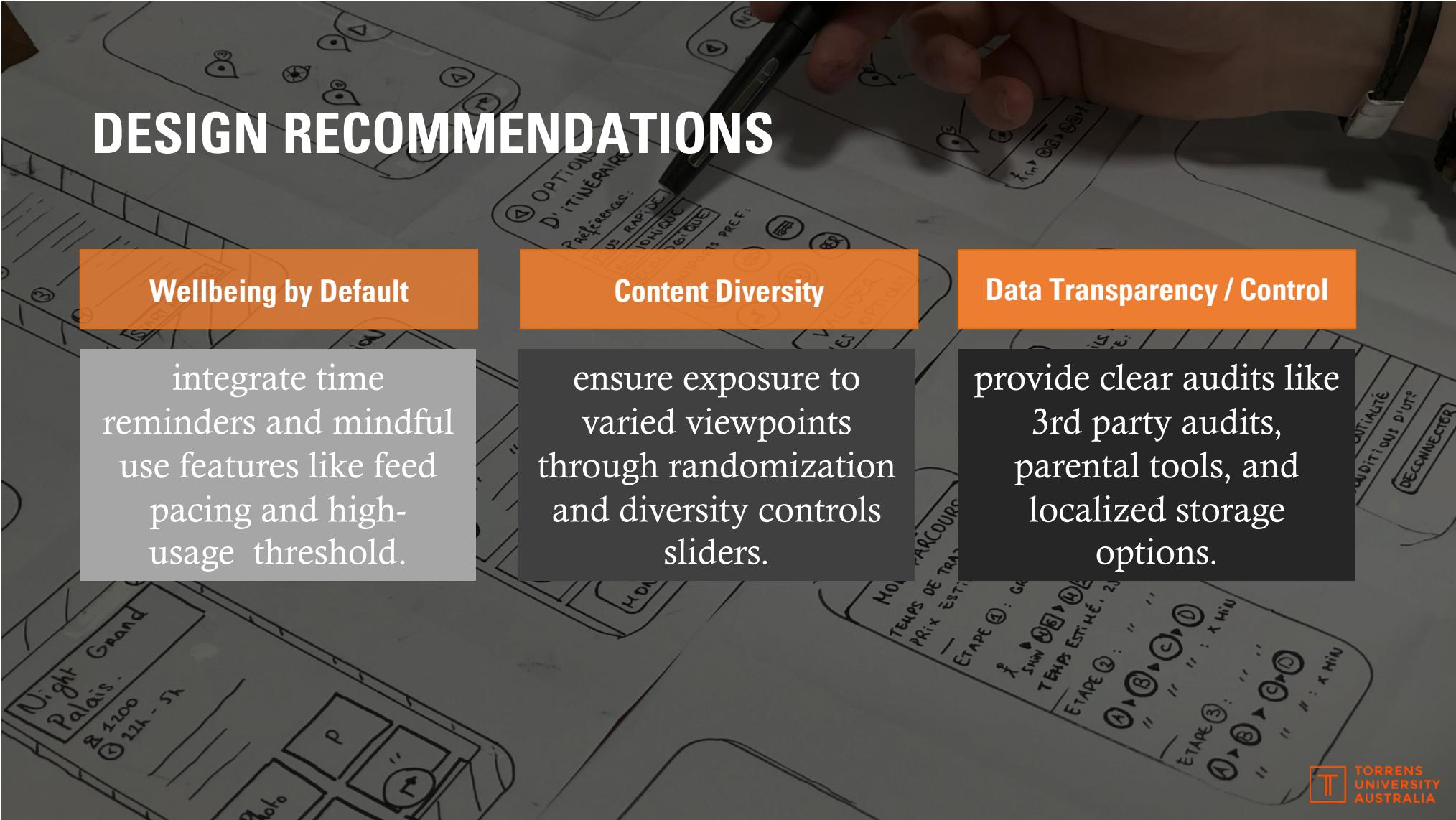
- New influencer economy
- Meme culture dominance
- Commerce: live shopping integrations
- Negative: reduced face-to-face, sedentary lifestyles.

# LONG TERM EFFECTS

- democratized creativity, cultural exchange
- attention fragmentation, rising anxiety, global mistrust in platforms

Paradox of Technology (Norman):

"More power = More complexity and Risks."



# DESIGN RECOMMENDATIONS

## Wellbeing by Default

integrate time reminders and mindful use features like feed pacing and high-usage threshold.

## Content Diversity

ensure exposure to varied viewpoints through randomization and diversity controls sliders.

## Data Transparency / Control

provide clear audits like 3rd party audits, parental tools, and localized storage options.

# TAKEAWAYS

- Recommender systems are the **technology that drives TikTok's success and controversy.**
- They exemplify both **human-centered design brilliance + ethical challenges.**
- The future of HCD depends on designing algorithms for wellbeing, not just engagement.

# STATEMENT OF ACKNOWLEDGEMENT

I acknowledge that I have used OpenAI's ChatGPT (GPT-5) to assist in the planning, outlining, and refinement of my presentation for HCD402 – Assessment 1. The tool supported me in structuring slide content, improving clarity of written explanations, and enhancing the overall flow of the presentation.

I confirm that the use of the AI tool has been in accordance with the Torrens University Academic Integrity Policy and TUA, Think, and MDS's Position Paper on the use of AI. I confirm that the final presentation and its analysis are authored by me and represent my own understanding, research, and critical thinking. I take full responsibility for the final content of this presentation.

# REFERENCES

- World Health Organization. (2020). *WHO guidelines on physical activity and sedentary behaviour*. [https://www.who.int/...](https://www.who.int/)
- Bull, F. C., et al. (2020). 2020 WHO guidelines... *Int. J. Behav. Nutr. Phys. Act.*, 17, 141. <https://doi.org/10.1186/s12966-020-01037-z>
- Aykut, G., et al. (2023). Reliability and validity of the problematic TikTok Use Scale... *Frontiers in Psychiatry*, 14. <https://doi.org/10.3389/fpsyg.2023.1068431>
- Haliti-Sylaj, L., & Sadiku, A. (2024). Impact of short reels on attention span... *Eurasian Journal of Applied Linguistics*, 10(3), 60–68.
- Zhang, X., et al. (2024). Mobile phone short video use negatively impacts attention... *Frontiers in Human Neuroscience*. <https://doi.org/10.3389/fnhum.2024.1383913>
- Shojaati, M., et al. (2022). Screen time increases overweight and obesity risk among adolescents: **Systematic review & meta-analysis**. *BMC Primary Care*, 23, 220. <https://doi.org/10.1186/s12875-022-01761-4>
- Wang, Y., et al. (2022). Effect of screen-time intervention on obesity... **Meta-analysis of RCTs**. *Preventive Medicine*. <https://doi.org/10.1016/j.ypmed.2022.107021>
- Bountouridis, D., et al. (2023). Filter bubbles in recommender systems: **Systematic review**. *arXiv:2307.01221*.
- Nielsen, R. K., et al. (2022). **Echo chambers & polarisation**: Literature review. Reuters Institute. <https://doi.org/10.60625/risj-etxj-7k60>
- Reuters. (2025, May 2). TikTok fined €530m... (EU DPC).
- Jannach, D., Pu, P., Ricci, F., & Zanker, M. (2021). Recommender systems: Past, present, future. *Ai Magazine*, 42(3), 3-6.
- Dong, Z., Wang, Z., Xu, J., Tang, R., & Wen, J. (2022). A brief history of recommender systems. *arXiv preprint arXiv:2209.01860*.

---

RESEARCH PRESENTATION:  
**EVOLUTION OF TECHNOLOGY**

Luis G. B. A. Faria  
Student ID A00187785  
Human-Centred Design  
Prof Dr. Omid Haas



# Thank You

October, 2025

