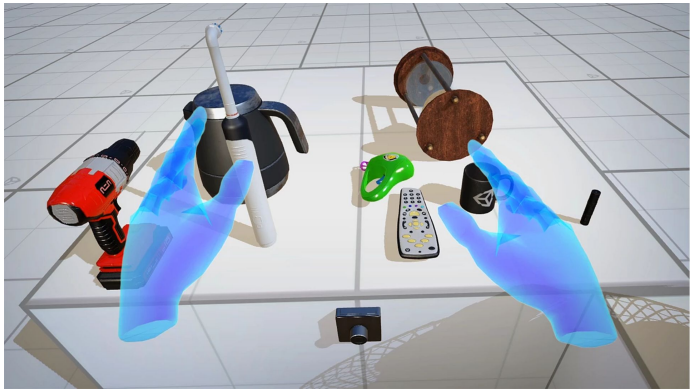
VRAwe

Zenan Shang, Erin Heath &
Ben Brent

VR for emotions

- VR creates a higher sense of presence (increased interaction & targets multiple senses).
- Greater immersion, more realistic & more effective in emotion elicitation.
- User-specific environments for different uses.
- Exposure therapy, psychotherapy.
- Training and educational applications that is too dangerous to practice in real life.
- Studying human behaviour and decision-making.



Awe

- Characterised by vastness and need for accommodation of mental schemas
- Change of perspective, self image & worldview and decreased aggression
- Increased willingness to learn & look after our planet and improved health
- Create realistic or fictional environments in Virtual Reality
- Little methodology provided as to how to design effective awe-eliciting environments
- Make benefits of awe more easily and readily accessible

Research Questions

- Will the different VR environments all designed to incorporate different forms of awe elicitors be successful in the elicitation of awe in users and which features contributed the most to this outcome?

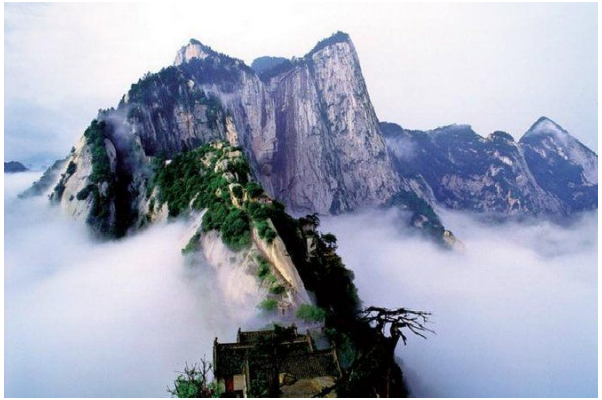
- Will the environments differ in success to elicit the feeling of awe?

- Which was the most successful environment and what contributed to the different levels of success or failure?

Design

A fantasy island

Huashan Mountain, China

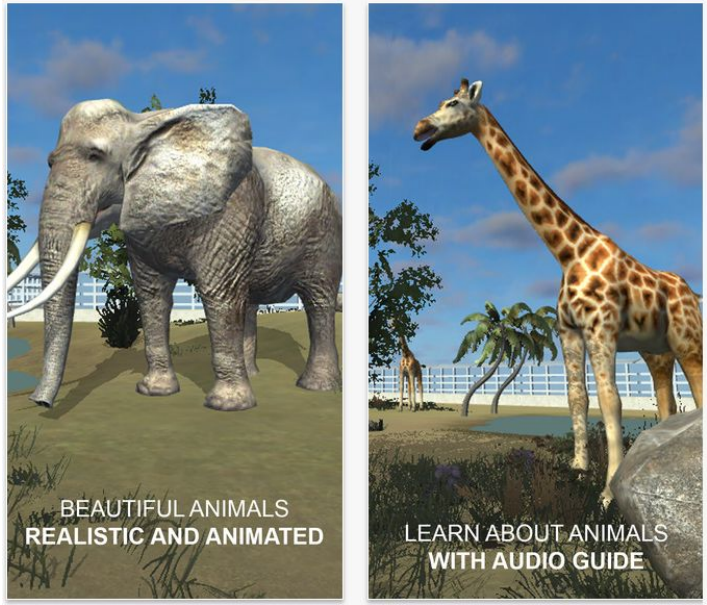


Petra, Jordan

Design Approach

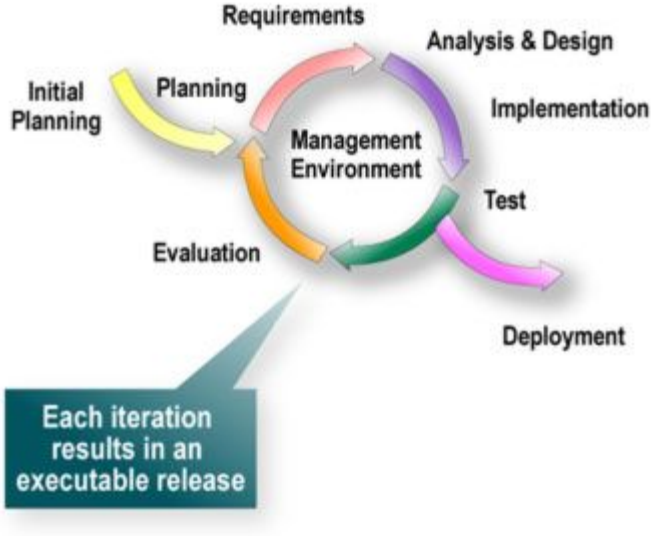
Northern Light

Animals in VR



Implementation Strategy

- Iterative approach starting with prototyping phase.
- Incorporate feedback from subsequent iterations.
- Early user involvement is key.
- UX and interaction feedback.

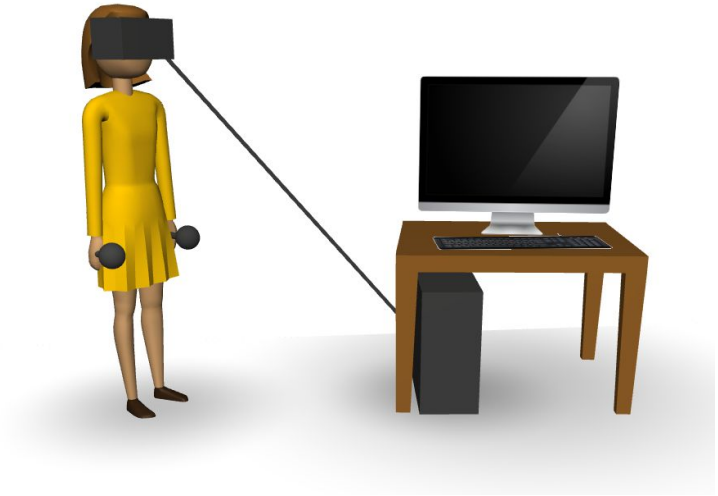


Implementation Strategy cont.

- Final few iterations will involve HE from our supervisor.
- Modified version of Nielsens heuristics adapted to a VR context by Sutcliffe and Gault:
  - Compatibility with user task and domain.
  - Natural expression of action.
  - Realistic feedback.
  - Close coordination of action and representation.
  - Navigation and orientation support.
  - Faithful viewpoints.
  - Sense of presence.

User Experiments

- 5-10 Psychology undergraduates per VE.
- Tutorial in neutral VE - baseline.
- Physiological assessment (HR, SCR using VU-AMS) & Goosebumps (small camera).
- Self-report questionnaires & ITC-SOPI.
- Participants will be obscured of the purpose (following APA's criteria for ethical deception).



Ethical issues

- Ethical application before experiments
- Participants may feel dizziness, headaches, vision blur
- Obtaining confidential information
- Rights participants have
- Consent Form needed to be signed

VIRTUAL REALITY EXPERIMENT CONSENT FORM

Title of Study: VRAwe

Researcher: Zenan Shang, Erin Heath, Ben Brent

Introduction:
You are invited to participate in a research study examining the effects of virtual reality on human emotions. The study involves the use of virtual reality equipment, which includes a headset and a computer. You will be asked to enter a virtual environment and respond to various stimuli while wearing the headset. The purpose of this study is to better understand the emotional impact of virtual reality and to explore its potential benefits.

Risks and Benefits:
There are no known risks associated with participating in this study, although some individuals may experience dizziness, headaches, or motion sickness as a result of using the virtual reality equipment. Participants may benefit from a better understanding of the emotional impact of virtual reality, and their participation in this study may contribute to the development of new therapeutic interventions.

Confidentiality:
All personal information collected during the study will be kept strictly confidential. Your data will be assigned a unique identifier to protect your identity. The data will be used for research purposes only and will be stored in a secure location.

Voluntary Participation:
Participation in this study is completely voluntary, and you have the right to withdraw at any time without penalty. If you choose to withdraw from the study, any data collected up until that point will be destroyed. You also have the right to ask any questions you may have before, during, or after the study.

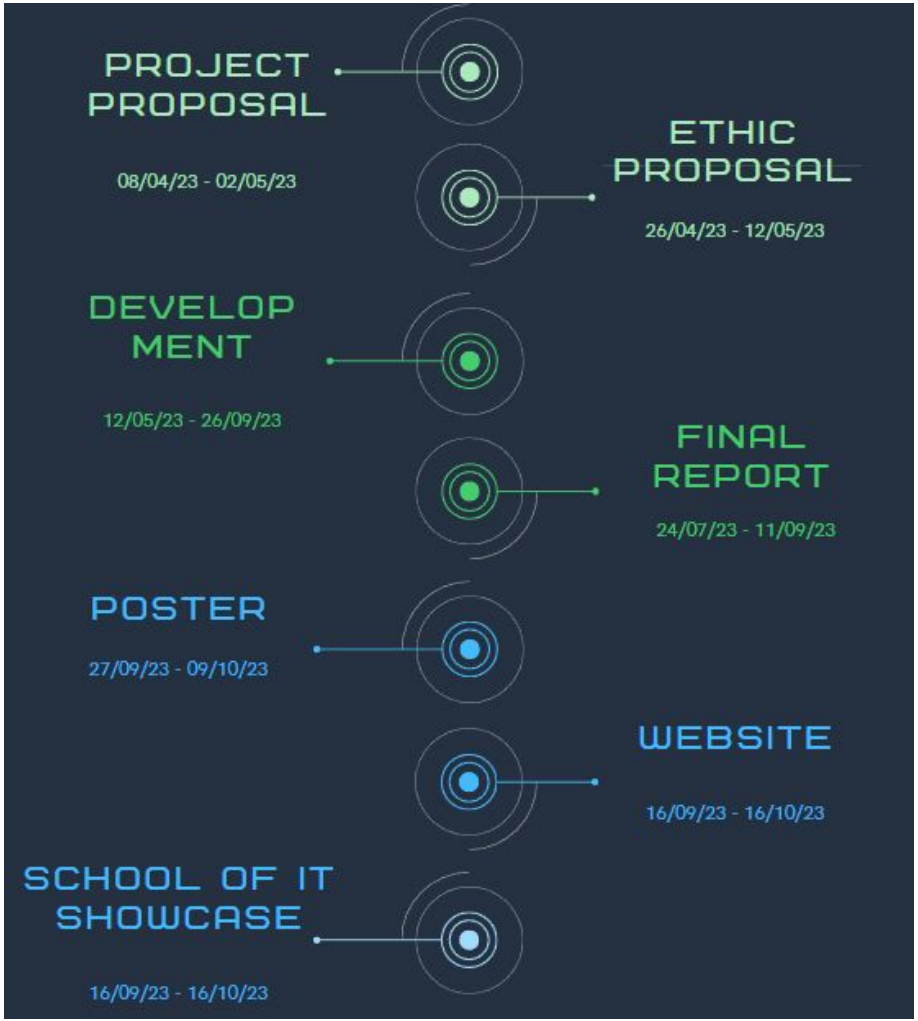
Contact Information:
If you have any questions or concerns about the study, you may contact the Zenan Shang through email: shnzen001@myuct.ac.za

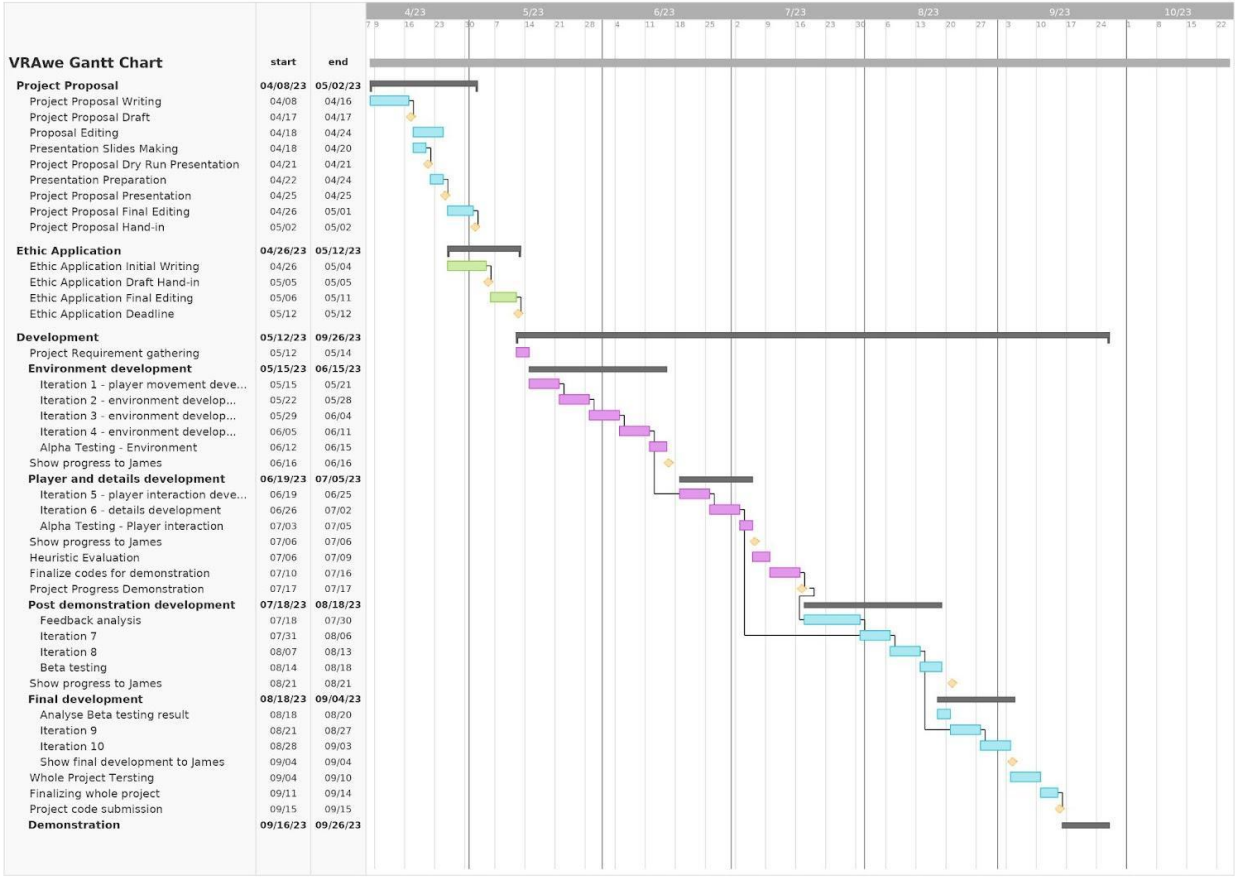
Consent:
I have read and understood the above information and agree to participate in this study. I understand that I have the right to withdraw at any time without penalty. I agree to allow the researcher to collect and use my data for research purposes.

Participant's Signature: _____

Date: _____

Risk	Consequence	Probability	Impact	Mitigation	Monitoring	Management
Chosen environment is too complex	The environment may not be designed on time.	Medium	High	Plan ahead to ensure that enough time is available to complete the application.	Check that the progression of the application follows the scheduled times.	Simplify the environment as much as possible for it to be completed while still maintaining its integrity.
Load shedding	Disruption of project development.	High	Low	All team members have Eskom se Push.	Check the load shedding schedule for our blocks daily.	Relocate to an unaffected block if an internet connection or electricity is required.
Ethics clearance is delayed	User participation cannot occur and so no research will be done.	Low	High	Hand in our ethics clearance form on the same day as our project proposal.	Reply promptly to the ethics department.	Ensure our VEs are ready for experimentation on our scheduled date so that experiments are performed as soon as clearance is permitted.
Issues with technological equipment (i.e. VR headsets, laptops, etc.)	This may include loss of data, inability to properly code or test applications with the VR equipment which will take more time to complete.	Low	High	Take proper care of equipment and save code using online storage spaces.	Check that there are no issues with VR equipment and laptops when using it.	Take equipment to be fixed, replace it or find alternate equipment to use if something happens. Use code saved online if needed.
Unknown mental issues of a participant that are triggered by the VE.	The particular result cannot be used and the participant may experience trauma.	Low	Medium	Thorough screening and briefing of participants prior to the experiment.	Monitor participants during experimentation for any unusual behaviour.	Stop the procedure if anything unusual happens.


PROJECT PROPOSAL
08/04/23 - 02/05/23
ETHIC PROPOSAL
26/04/23 - 12/05/23
DEVELOP MENT
12/05/23 - 26/09/23
FINAL REPORT
24/07/23 - 11/09/23
POSTER
27/09/23 - 09/10/23
WEBSITE
16/09/23 - 16/10/23
SCHOOL OF IT SHOWCASE
16/09/23 - 16/10/23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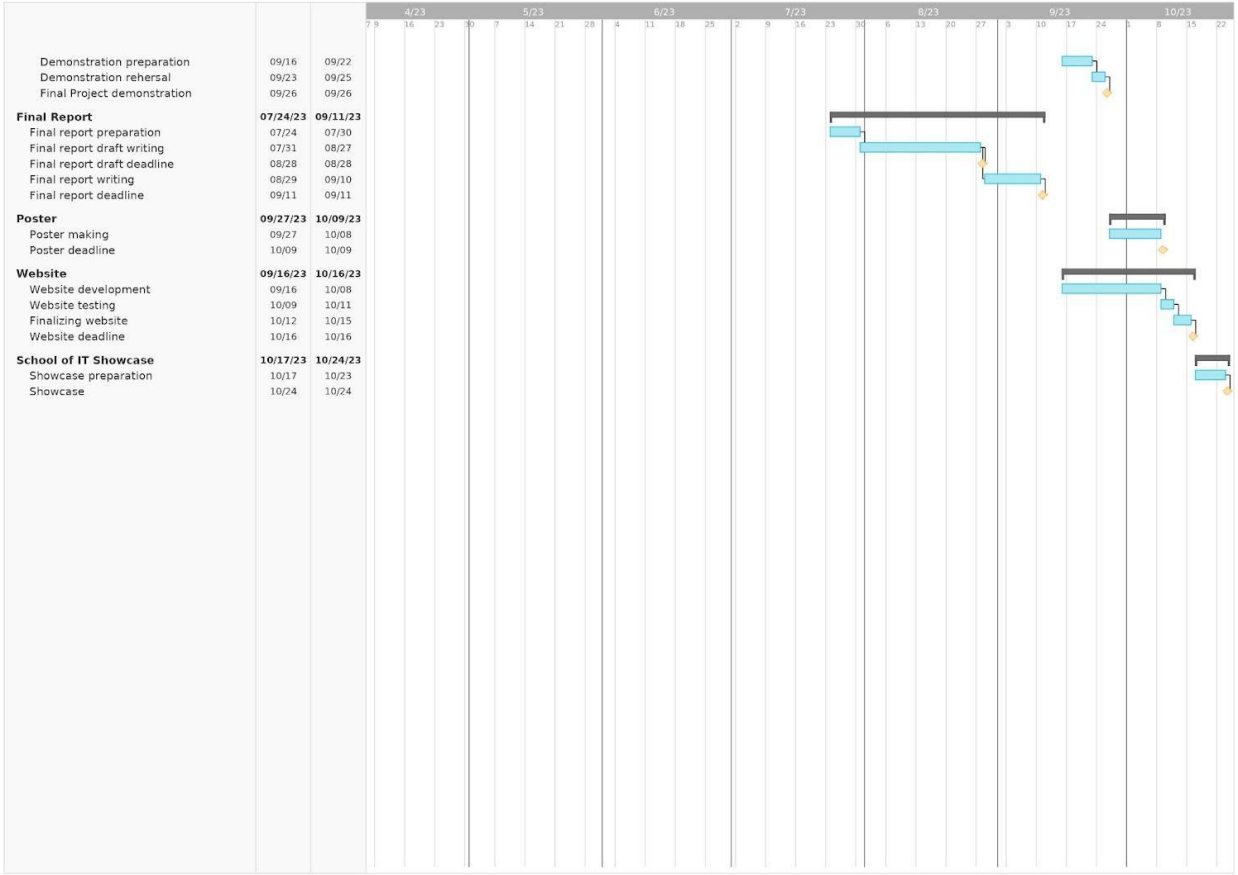
9/23
10/23
VRAwe Gantt Chart
start
end
Project Proposal 04/08/23 05/02/23
Project Proposal Writing 04/08 04/16
Project Proposal Draft 04/17 04/17
Proposal Editing 04/18 04/24
Presentation Slides Making 04/18 04/20
Project Proposal Dry Run Presentation 04/21 04/21
Presentation Preparation 04/22 04/24
Project Proposal Presentation 04/25 04/25
Project Proposal Final Editing 04/26 05/01
Project Proposal Hand-in 05/02 05/02
Ethic Application 04/26/23 05/12/23
Ethic Application Initial Writing 04/26 05/04
Ethic Application Draft Hand-in 05/05 05/05
Ethic Application Final Editing 05/06 05/11
Ethic Application Deadline 05/12 05/12
Development 05/12/23 09/26/23
Project Requirement gathering 05/12 05/14
Environment development 05/15/23 06/15/23
Iteration 1 - player movement deve... 05/15 05/21
Iteration 2 - environment develop... 05/22 05/28
Iteration 3 - environment develop... 05/29 06/04
Iteration 4 - environment develop... 06/05 06/11
Alpha Testing - Environment 06/12 06/15
Show progress to James 06/16 06/16
Player and details development 06/19/23 07/05/23
Iteration 5 - player interaction deve... 06/19 06/25
Iteration 6 - details development 06/26 07/02
Alpha Testing - Player interaction 07/03 07/05
Show progress to James 07/06 07/06
Heuristic Evaluation 07/06 07/09
Finalize codes for demonstration 07/10 07/16
Project Progress Demonstration 07/17 07/17
Post demonstration development 07/18/23 08/18/23
Feedback analysis 07/18 07/30
Iteration 7 07/31 08/06
Iteration 8 08/07 08/13
Beta testing 08/14 08/18
Show progress to James 08/21 08/21
Final development 08/18/23 09/04/23
Analyse Beta testing result 08/18 08/20
Iteration 9 08/21 08/27
Iteration 10 08/28 09/03
Show final development to James 09/04 09/04
Whole Project Tersting 09/04 09/10
Finalizing whole project 09/11 09/14
Project code submission 09/15 09/15
Demonstration 09/16/23 09/26/23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10/23
Demonstration preparation 09/16 09/22
Demonstration rehersal 09/23 09/25
Final Project demonstration 09/26 09/26
Final Report 07/24/23 09/11/23
Final report preparation 07/24 07/30
Final report draft writing 07/31 08/27
Final report draft deadline 08/28 08/28
Final report writing 08/29 09/10
Final report deadline 09/11 09/11
Poster 09/27/23 10/09/23
Poster making 09/27 10/08
Poster deadline 10/09 10/09
Website 09/16/23 10/16/23
Website development 09/16 10/08
Website testing 10/09 10/11
Finalizing website 10/12 10/15
Website deadline 10/16 10/16
School of IT Showcase 10/17/23 10/24/23
Showcase preparation 10/17 10/23
Showcase 10/24 10/24