XR
in Mining Education

Faculty of Engineering, Built Environment and Information Technology

Fakulteit Ingenieurswese, Bou-omgewing en Inligtingtegnologie / Lefapha la Boetšenere, Tikologo ya Kago le Theknolotši ya Tshedimošo

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Implementation @
Department of Mining Engineering

- Teaching facilities

- Applications

- Research

Teaching facilities

3D Cinematic Theatre

- Active 3D visuals
- 8m x 4m Widescreen
- Visualization and Presentation

Teaching facilities
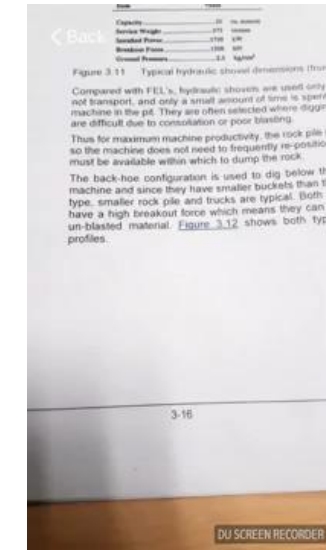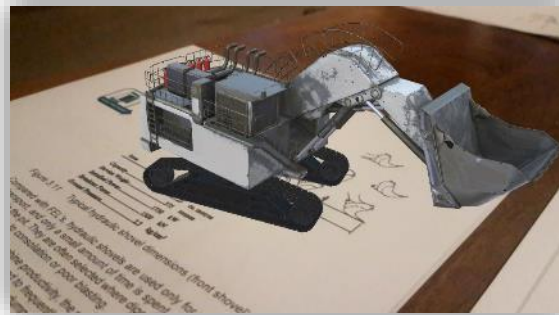
Immersive Theatre

- 10m Diameter Cylinder
- 360° 3D Display
- Modules
  - *Mining Methods*
  - *Metallurgical / Beneficiation Plant*
  - *Rehabilitation Plan*
  - *360-3D Video player*

- Immersive experience

Teaching Applications

Mobile AR

- 3D models linked to study notes
- 3D models on web portal
- Unique QR code scanned by mobile device

Teaching Applications

Geological Hazard Identification

- Tethered VR application
- Full room scale tracking
- Randomized geotechnical features
- Training in a virtual museum

See the video for more detail -> https://youtu.be/jYUIMzj8lcE

Teaching Applications

Checklist Training

- Mobile VR application
- Explore & complete the checklist
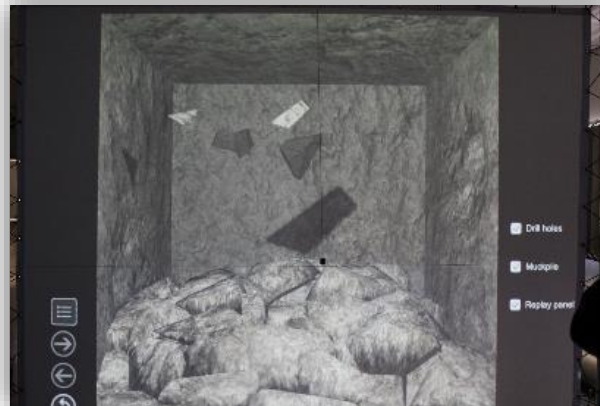- Randomizes the state of the checklist items

See the video for more detail -> https://youtu.be/V77j8mFOAFs

Teaching Applications

Interactive Blast Wall

- Simulation like tunnel
- Record blast hole positions
- Timing of blast holes
- Post blast analysis and fracturing patterns

- Assess marking accuracy and timing

Teaching Applications

Scenario Training

- Branching narrative
- Present consequence of discission
- Teach – Learn – **Un**learn – **Re**learn

360 In-Video Assessment

- Mobile VR application
- Easy creation of quizzes by facilitator
- Web based

See the video for more detail -> https://youtu.be/Vmeng-xDvkA

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jannie.maritz@up.ac.za

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