HOLOGRAPHIC 3D SOLUTIONS

HOLOXICA TECHNOLOGY

DR. JAVID KHAN

MANAGING DIRECTOR

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HOLOXICA OVERVIEW

- Foundation
  - ✓ Edinburgh University
  - ✓ CodeBase Incubator
- Technologies & Solutions
  - ✓ 3D Graphics content
  - ✓ Software & Imaging
  - ✓ Display Hardware

CODEBASE

THE UNIVERSITY OF EDINBURGH

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MANAGEMENT & TEAM

- Dr Javid Khan, CEO
  - ✓ DEng Photonics, Philips
- Dr Graham Dodgson, CMO
  - ✓ PhD Biomed Devices, Acorn/ARM
- Dr Chi Can: Display Systems Engineer
- David Viallard: Engineering Design
- Jacob Connolly-Bond: Graphics programming
- Advisors

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ABOUT DR JAVID KHAN

- Founder Holoxica Ltd
- Project Officer, EU
- Senior Design Engineer, Philips
- EngD Photonics, MEng, MSc, MBA
- Awards

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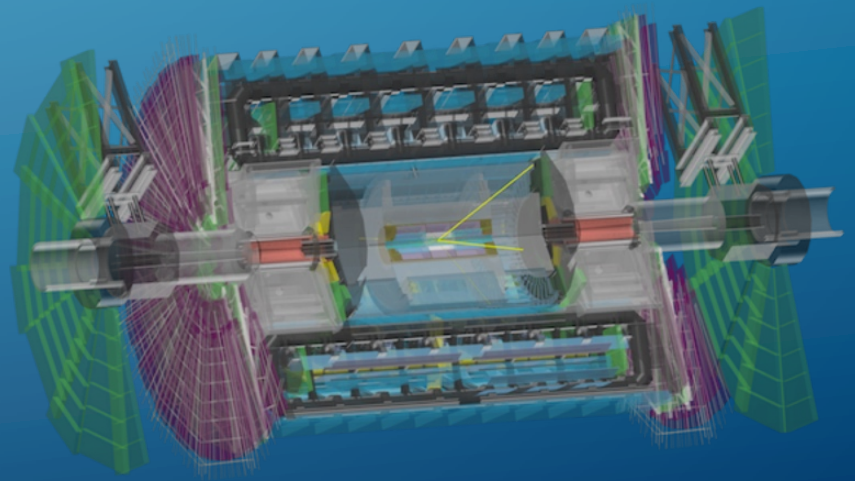
PROFESSIONAL 3D

For people to work, see and play in 3D

Real holographic 3D, the way it should be

Presentation of critical & complex data



PRODUCTS

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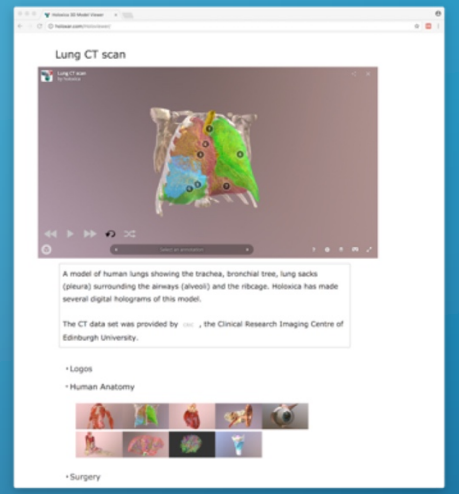
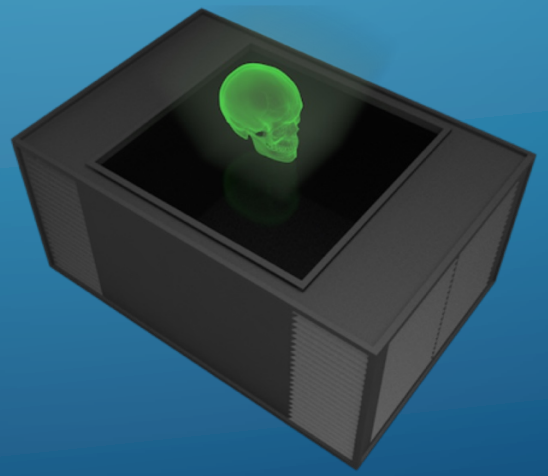
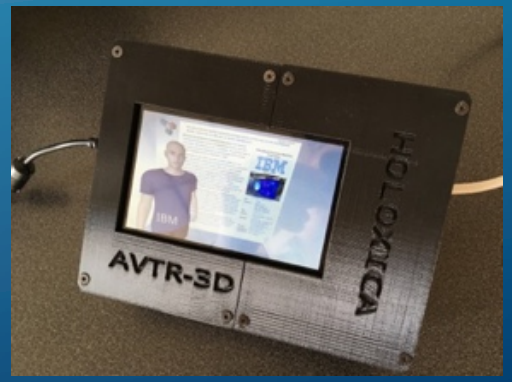
- 3D Model Viewer
- Avatar AI
  - ✓SW, HW
- Digital Holograms
- Embedded systems
- Holographic Displays
  - ✓4 Generations







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SERVICES

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- Boutique Engineering
  - ✓ Feasibility studies
  - ✓ Consultancy
  - ✓ Contract R&D for prototypes
- Holographic/diffractive optics
- Digital systems
  - ✓ Embedded boards, FPGAs
  - ✓ Computer Graphics
  - ✓ Image & signal processing

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INTELLECTUAL PROPERTY

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- Four Patents
  - ✓ One granted, others pending
- Trade secrets, know-how
  - ✓ Image & signal processing, AI
  - ✓ Design, simulation, modelling
  - ✓ Software & Apps APIs
- 3D Models/assets

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BUSINESS MODEL

- Contract work
- Collaborative projects
- Partnerships
- Licensing
  - ✓ Software
  - ✓ Media/assets
  - ✓ Hardware

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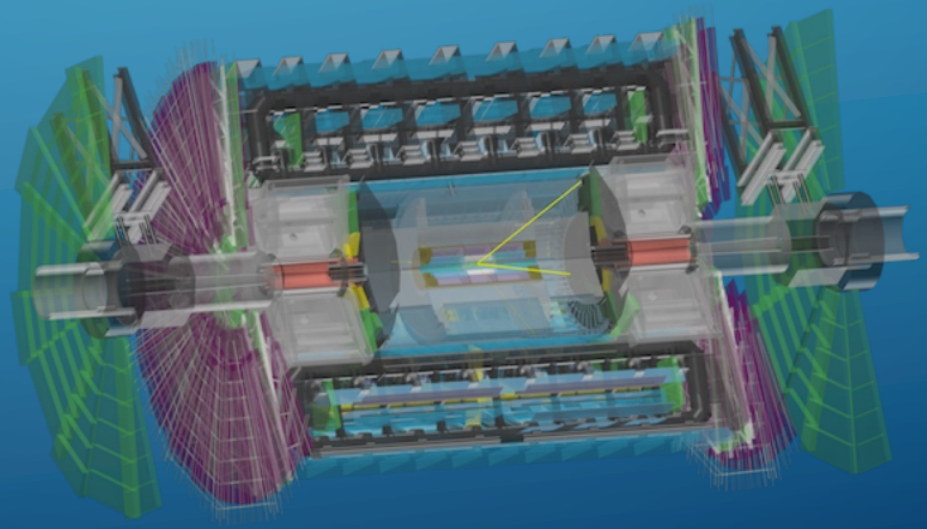
APPLICATIONS

- Medical Imaging
- Scientific Data Visualisation
- Engineering Design
- Automotive
- Architecture
- Aerospace
- Military



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HOLOGRAMS:: USES

- Public Engagement
  - ✓ Museums
  - ✓ Science Centres
  - ✓ Festivals
  - ✓ University open days
- Teaching
- Training
- Pre-visualisation
- Conferences
- Corporate
  - ✓ Trade shows/Exhibitions
  - ✓ Ceremonies/Awards
  - ✓ Lobbies

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3D VIEWER APP

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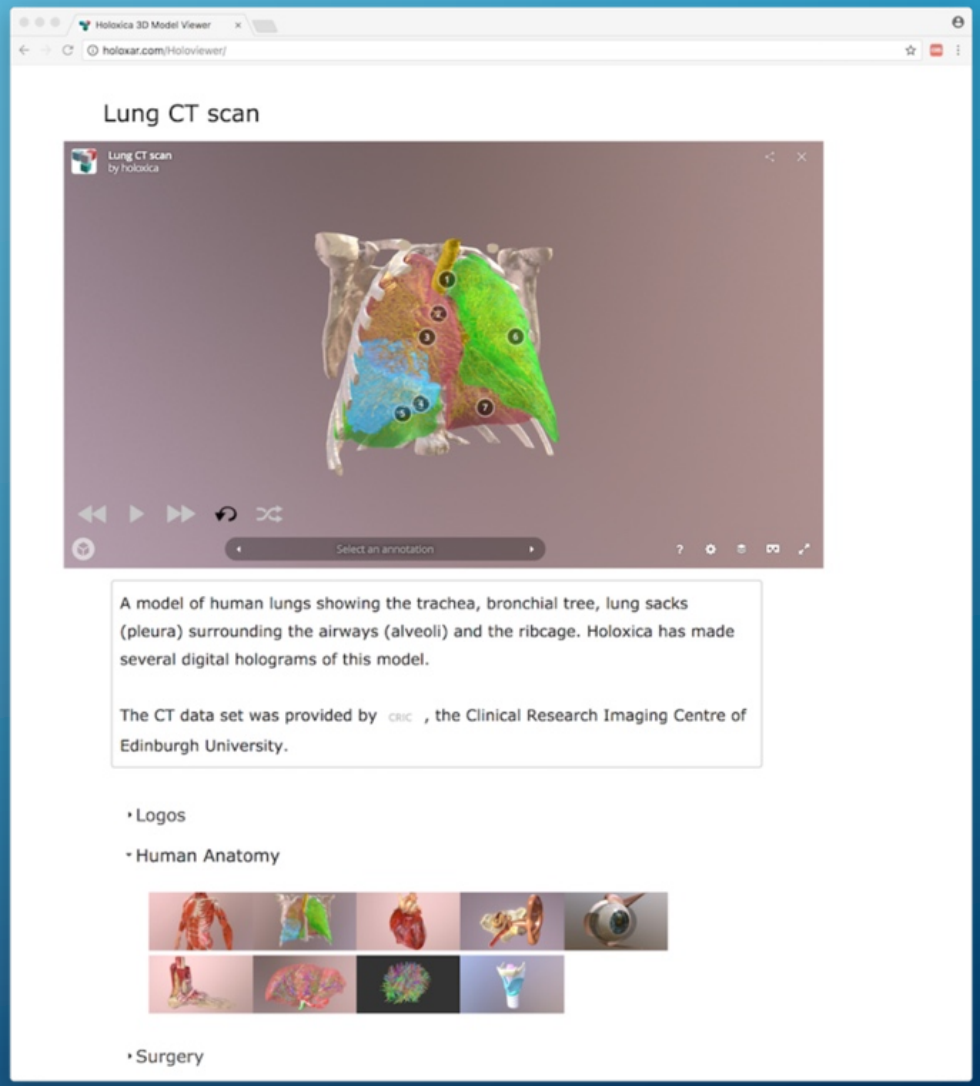
- Cloud-based App
- Stand-alone version
- View 3D Models
- Preview holograms
- Own customers only
- Demo
- Future
  - ✓ 3D Display interface



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3D AVATARS:: VIRTUAL CHARACTER

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- Software
- Hardware
- Media
- IBM sponsored
  - ✓ AI services
- Hardware
  - ✓ Embedded 2D
  - ✓ Holographic 3D

HOLOGRAPHIC VIDEO DISPLAYS

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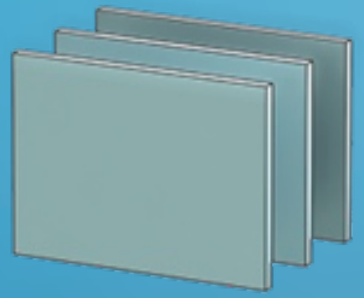
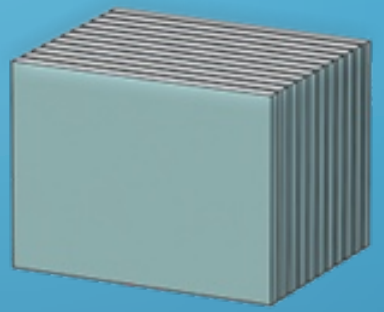
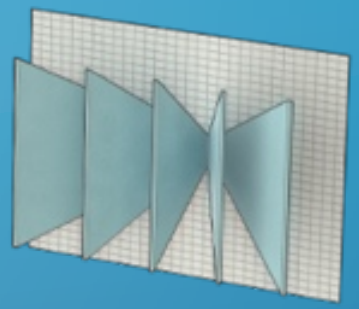
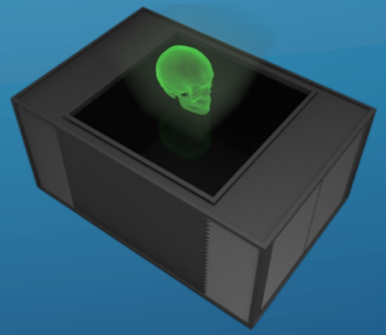
Gen: 1st	2nd	3rd	4th
			
Segmented	Planar	Volumetric	Light Field
10~100 px	100~500k px	1~10M vox	50M+ rays
			
2010	2013	2016	

Time

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1ST GEN DISPLAY

- Patented
- Proof of concept
- Holoscreen
  - ✓ Large ara
  - ✓ Fixed nr frames
  - ✓ Easy illumination
- Limitations
  - ✓ Limited resolution
  - ✓ Scalability

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2ND GEN DISPLAY

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- Based on HOE/DOE
- HUD-style Planar display
- Interactive
- Image size ~7x7cm
- Apps

the Gadget show

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APPS

- HUD main
- Counter
- AirDraw
- Keypad
- Meter
- Ball

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3RD GEN: VOLUMETRIC DISPLAY

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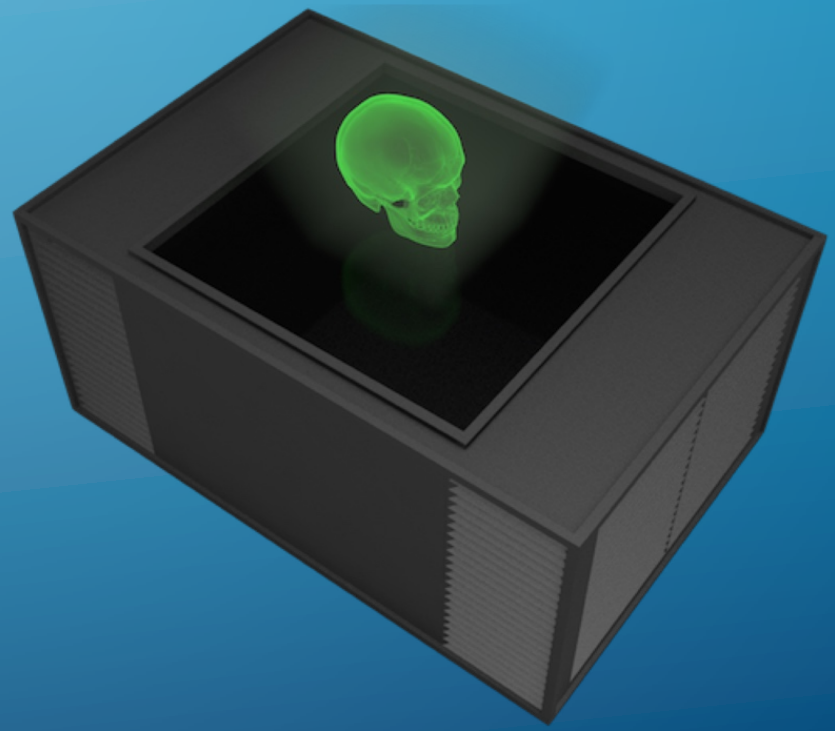
- 3rd Generation display
  - ✓ Patent pending
- Real space
- Volume slices
  - ✓ CT/MRI scanners
- Advanced components
  - ✓ Lasers
  - ✓ Optical elements
- Seeking Investment



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NEXT GEN:: PROJECTION LIGHT FIELD

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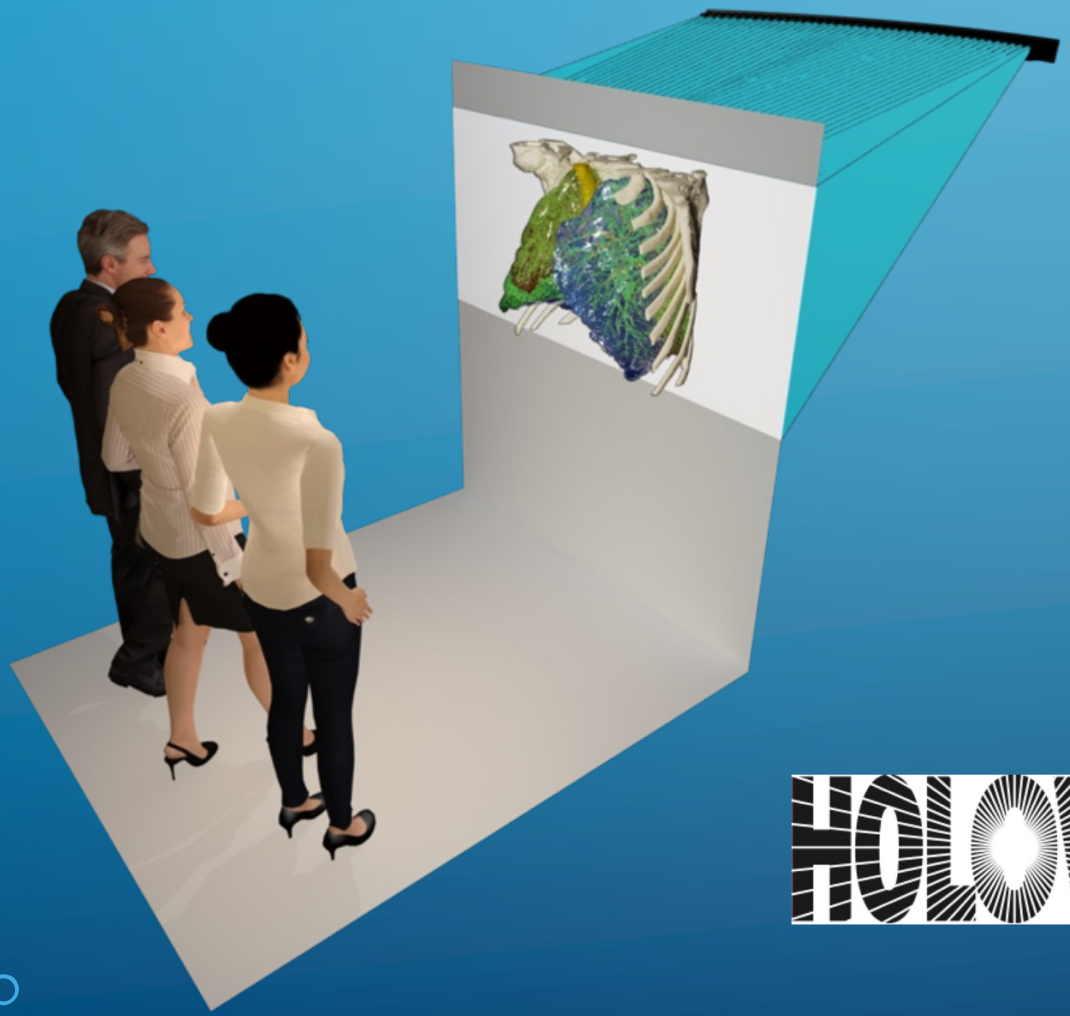

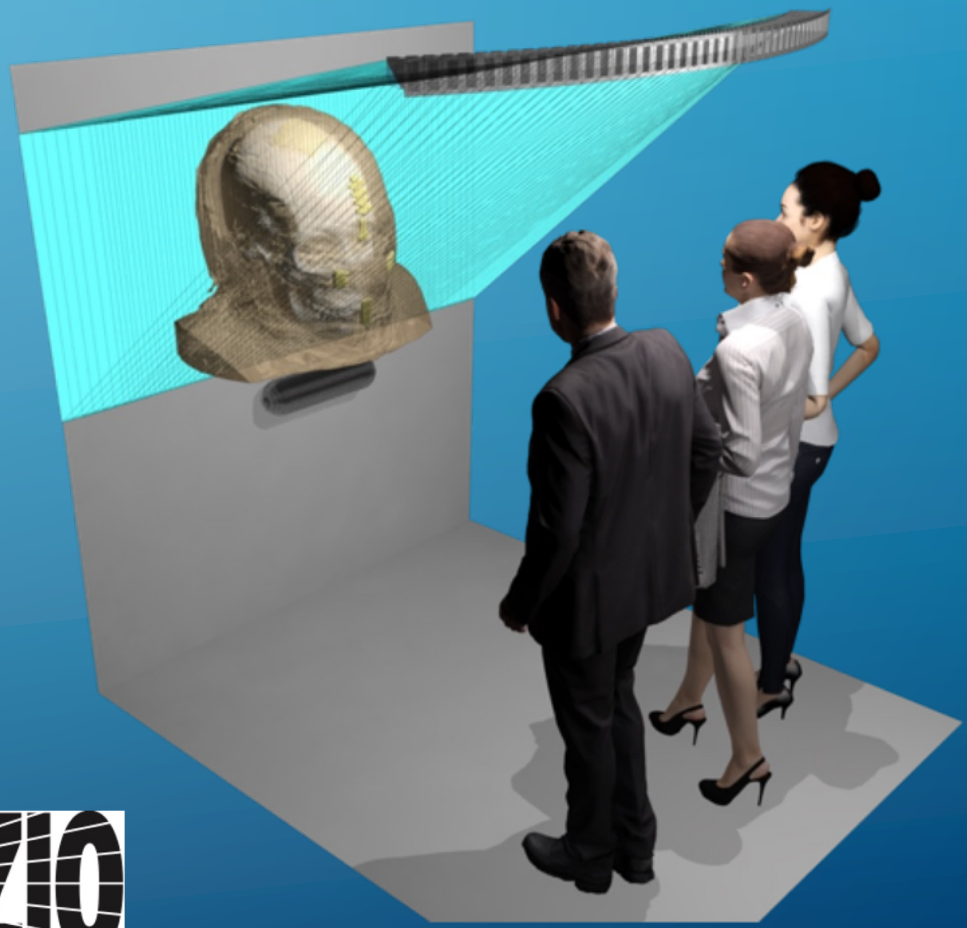

HOLOVIZIO

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THANK YOU!

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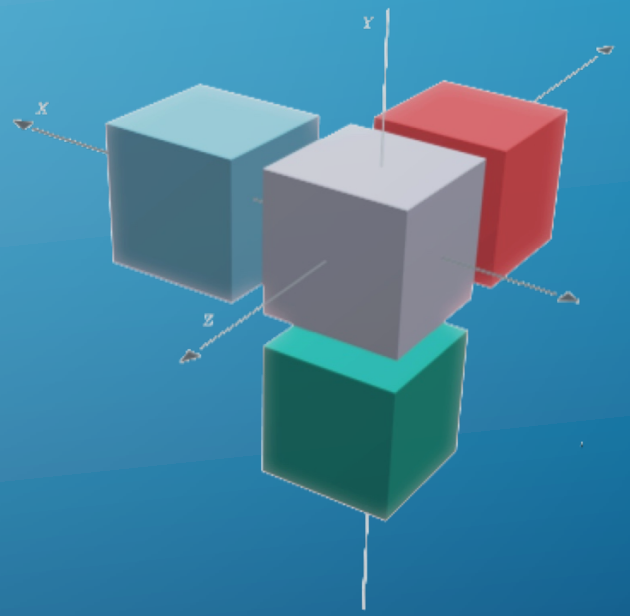

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