DIGITAL HOLOGRAPHIC MEDICAL IMAGING
FROM ORGANS TO FULL HUMAN ANATOMY

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Holoprinter Technology

- Architecture
  - RGB pulse lasers
  - Holopixels/hogels
- Material
- SLM
- Optics
- X-Y stage
- Desktop devices
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Benefits of 3D Visualisation

- 75% better in general [1]
  - Spatial Manipulation
  - Finding/ID/classification
- 40% Faster interpretation of CT [2]
- 15% Faster Surgery [3]
- ~20% better quality surgery [3]
Rhind Mummy

- Forensic Archaeology
- CT scan
- NMS, CRIC
- Channels
- MIT Museum
- New Scientist
- Fabrication
  - View, Geola
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Public Engagement
Royal College of Surgeons
Animated hologram
Fabrication
- View Holographics
- Geola
- Zebra Imaging
Brain Fibre Tracts

- Functional MRI
  - Diffusion Tensor Imaging
  - Water molecules
  - Anisotropic Diffusion

- Neuroscience
  - Stroke
  - Cancer
  - Degenerative diseases
Full Human Anatomy

- Teaching & training
- Edinburgh University
  - Medical School
  - Award!
- 3 Channels
  - Muscles
  - Skeleton
  - Internal organs
- Fabrication
  - 1.7x0.6m
Full Human Anatomy

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Dr. Jared Khan @ Hebozica Ltd
Holographic Video Display

- 3rd Generation display
  - Real space
  - Volume slices
  - Medical scanners
- Advanced components
- Seeking collaborators
  - Clinical
  - Image assessment
References