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Serious Games and Digital Health

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Serious Games & Digital Health

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Serious Games for Post-Stroke Rehabilitation

Funded by NI Chest, Heart & Stroke Association
Serious Games for Respiratory Physiotherapy

Partner with Nottingham University Hospitals
EU Regional Development Fund

Inspiring tomorrow's professionals

3D Visualisation for Anatomy Education

Real-time Medical Visualisation of Human Head & Neck Anatomy and its Applications for Dental Training

Partner with
- Laboratory of Human Anatomy
  University of Glasgow

Funding
- NHS Education for Scotland

3D Visualisation for Physiology Education

- Data Acquisition
  - Optical Microscope
  - PET Scan

- Image Processing
  - Processing: Image software
  - TIFF Files

- Segmentation and Surface Generation
  - AirTrack 3.4.3 - Semi-automatic and manual segmentation
  - CBV Files

- Post-processing and Rendering
  - Autodesk Maya 2015 - Modelling and animation
  - VR eXport Files

- Interactive Application
  - Unity3D game engine
  - NVIDIA
  - Stereolence.exe

Partner with
School of Life Sciences, University of Glasgow
Funded by
Physiological Society David Jordan teaching grant

Sur-Face: A mobile app for educating patients regarding corrective surgery of facial deformities

- Orthognathic surgery - a complex procedure to correct the underlying facial deformities
- Patients make voluntary decisions
- Understand the intricacy of the techniques & potential risks of the surgery before they sign the consent form
- Interactive 3D visualizations in healthcare app

Available on Google Play, search Sur ‘FACE’ Yeshwanth
Oculus Surgery
a mixed reality surgical training experience
Don’t worry Sir, you are in safe hands. We played the game well!


http://www.springer.com/engineering/computational+intelligence+and+complexity/book/978-3-642-54815-4
Mixed Reality Virtual Survivors for Holocaust Education

- The *Interact* Project
- Partners
  - The National Holocaust Centre & Museum
  - University of Huddersfield
  - Bright White Ltd
- Funding: NESTA, AHRC, The Arts Council England

Interaction of Holocaust Testimony and QA

Inspiring tomorrow's professionals
Flow chart of *Interact*

- **Speech recognition**
  - Spoken question
  - Text

- **Query Elaboration**
  - Standardised question

- **Information Retrieval**
  - Unique answer ID

- **Logic**
  - Has this answer just been played? Is the AV waiting/listening to questions?

- **AV Playback**
  - Meta data
  - Spoken answer

- **3D Graphic Engine**

Virtual patients for training doctors’ communication skills

Thank you

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