VEC VIRTUAL ENGINEERING CENTRE

Since joining the VEC I have had the experience of working on multiple projects which have genuinely interested me and I have already seen their wider impact on communities and for businesses...

You May Live To See Man-Made Wonders Beyond Your Comprehension

RADOSLAW DOROCIAK

INTERN AT THE VEC

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🌐 www.virtualengineeringcentre.com

PROJECTS

> **Meet the revolutionary nurse brought to life through AI and motion capture technology**

The VEC has developed a virtual representation of historical figure and nurse Mary Seacole that enables the user to interact with the character by asking her questions about her life and background to receive bespoke and real-time answers.

Since the existing model was handed to Radoslaw, he has delivered significant updates, connecting it to AI and utilising a vector database trained with historical data about Mary Seacole to increase the accuracy of the responses and open up the potential for further expanding the character's knowledge base.

Radoslaw has enhanced functionality by adding multiple camera angles, heightening realism, and giving users the option to type in questions for better accessibility. Radoslaw has even used motion capture methods to capture his face and movements for effectively displaying different expressions on the Mary model, which changes based on which emotional subjects she talks about.

The model has now been demonstrated at St George's Hall as part of an educational tour where Radoslaw assisted children and school groups to engage directly with the model and become immersed in their learning experience.

> **Empowering individuals to virtually represent themselves**

A collaboration with the Brain Charity explores how Neurodivergent people or those who have experienced strokes would like to be represented by avatars or virtual metahumans. Users can capture their facial animation and reflect it onto a virtual character in real time, with options to simulate nerve damage or mirror healthy facial movements onto paralysed areas.

BACKGROUND

BSc (Hons) Computer Games Development at Liverpool John Moores University

SKILLS

- Unreal Engine Development
- Language Models and Vector Data
- User Interface Design

INTERESTS

- Generative AI
- Virtual Character Creation

UNIVERSITY OF LIVERPOOL