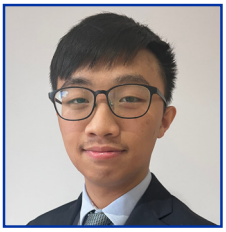
Falk Foundation/Guts UK Awards 2025

MEDICAL STUDENT PRIZE WINNER:
Wei Han Ethan Chang



Improving Accessibility and Patient Understanding of Endoscopy with Multilingual Videos Using Text-To-Speech Models

Mr Wei Han Ethan Chang is a 3rd year medical student at Imperial College London. He is undertaking this extracurricular quality improvement project at London North West University Healthcare NHS Trust.

Mr Chang explains:

'My project aims to tackle the communication barriers faced by patients with limited English proficiency when preparing for common endoscopy procedures.

'The idea for this project was inspired by several key experiences. The positive impact of an animated health education video I created during a GP placement to explain the personalised care teams sparked my interest in making information more accessible. On another separate occasion, seeing a family friend struggle with the patient leaflets before their endoscopy, truly brought the need into focus.

'Witnessing the challenge of language barriers first hand, particularly in diverse communities like my local area where over 5% of its residents' report limited English proficiency, and recognising the potential of video media, led me to conceptualise this solution. Combining these insights with my interest in technology, particularly text-to-speech (TTS) models from a previous project developing an automated mock OSCE app, led to this current work.

'The core aim of the project is to create a series of concise, animated, multilingual videos, explaining procedures such as OGD (upper GI endoscopy), colonoscopy, flexible sigmoidoscopy and bowel preparation. Using advanced text-to-speech (TTS) technology like ElevenLabs for narration in multiple languages, alongside simplified and intuitive visuals, these videos will guide patients through what to expect before, during, and after their procedures.

'The videos will be distributed via QR codes on appointment letters and online platforms to enhance accessibility for linguistically diverse patients, whilst allowing it to be scalable across a variety of settings.

'The anticipated outcomes are significant: improved patient understanding and adherence to preparation protocols, which can lead to higher quality procedures, reduced cancellations and, consequently, cost savings for the NHS. Clearer patient expectations should also lessen their anxiety and streamline the procedural experience.

'This summer, I will pilot the videos to gather patient feedback on comprehension and effectiveness. Beyond this initial phase, my goal is to develop a shareable template, empowering healthcare professionals without technical expertise to create and adapt their own videos with accessible content in many languages. Ultimately, this project seeks to make vital healthcare information as inclusive and understandable for patients of all backgrounds, supporting the NHS's goals for digital transformation and health equity and extending its benefits to wider ranges of patient groups, including neurodivergent patients and those with learning difficulties.'

Mr Chang's Project Supervisor, Dr Stephanie Poo, GI registrar and Clinical research fellow at London North West University Healthcare NHS Trust comments:

'Ethan Chang is a dedicated and motivated medical student from Imperial College London who approached this project with both technical skills and genuine compassion. Through managing patients from diverse ethnic backgrounds in North West London, we recognised that traditional, text-heavy patient leaflets often failed to overcome language barriers, thus affecting patient experience in endoscopy. Drawing on his expertise on video technology, we therefore came up with a clever innovative solution. Ethan's plan to translate complex clinical processes into simple, multilingual videos reflects his ability to blend his communication and design skills to tackle real healthcare challenges. I'm excited to see him make a positive difference in digital health and patient care, building on this impressive foundation.'

Mr Chang states:

'Winning this Award is a truly humbling honour. This prestigious recognition reinforces my effort to combine my interests in medicine and technology to address health inequalities and, I hope, to make meaningful impact on patient care. Importantly, it underscores how even small, focused projects like this can contribute to tackling real-world healthcare challenges. This award gives me the momentum to finishing the project this summer, and I'm particularly excited about developing the framework to make this approach accessible for others to use.'

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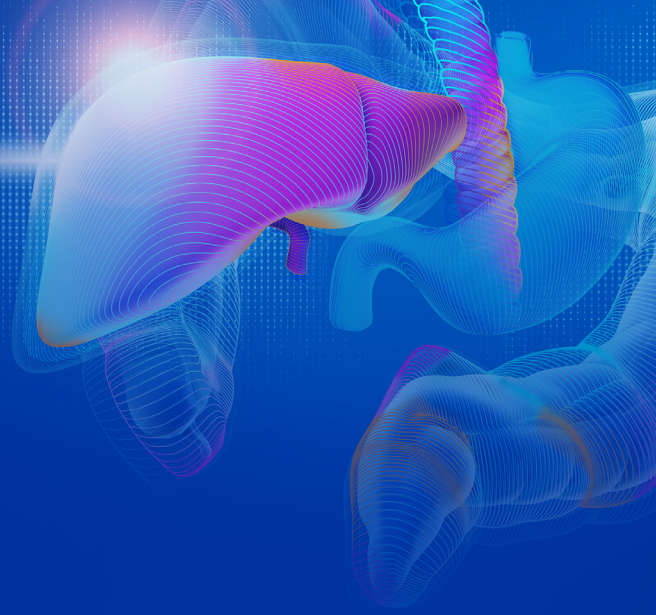

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