

Reducing AI generated fraud with AI powered media authenticity

STFC Hartree® Centre worked with Photocert to develop a solution to identify AI generated images for organisations who depend on authenticating media through the Hartree National Centre of Digital Innovation (HNCDI).

Challenge

Since 2022 generative AI image creation has grown at an unprecedented scale, with more than 15 billion AI-generated images have been created and estimates showing over 30 million synthetic images produced daily globally. This volume now exceeds the total number of images taken with cameras throughout much of human history. For industries such as financial services and insurance, where decisions depend on trusted photos and documents, this explosion in AI-generated imagery presents a systemic risk. Images can now be convincingly fabricated at scale, making legacy verification methods insufficient. Photocert faced the challenge of building a detection system that could reliably distinguish real from AI-generated images across multiple generators whilst remaining explainable, scalable and resilient to the rapid evolution of generative AI models.

Approach

We worked with Photocert to co-develop an advanced generative AI detection algorithm. We labelled a dataset of 100,000 images to train an algorithm to recognise real images, fully AI-generated images and partially AI-generated images sourced from publicly available datasets. To ensure the accuracy of the model we tested it on a dataset of 2,000 images evenly split between real and AI-generated images produced using multiple popular generative AI models including the most advanced generative AI media models available on the market. Our experts evaluated multiple image decoding strategies ranging from classical machine learning to deep learning-based approaches. After extensive experimentation, a classifier was selected due to its superior accuracy and consistency in identifying AI-generated images.

“Photocert’s technology gives organisations the confidence and clarity to make decisions in complex or ambiguous cases, enabling seamless straight-through processing.”

Pasquale Saviano,
CEO, Photocert



Credit: Canva

Benefits

We developed a meaningful tool to combat the growing concerns of AI-generated image fraud. Photocert now has a robust, explainable detection model that integrates seamlessly into existing workflows, giving financial institutions and insurers the confidence to trust the visual evidence underpinning their decisions. By accurately distinguishing real images from synthetic ones, including partially manipulated content, organisations can significantly reduce their exposure to fraud at scale. Photocert will continue to develop the model as generative AI advances, ensuring detection capability keeps pace with new tools and strengthening the UK's resilience in an era where synthetic media has become industrialised.



At a glance

- Generative AI agnostic image detection capability
- Deep learning decoders outperforming classical ML approaches
- Validated on a multi model labelled dataset
- Scalable and explainable architecture designed for continuous evolution

The programme

The Hartree National Centre for Digital Innovation is a collaboration between the Hartree Centre and IBM which offers a safe and supportive environment for UK organisations to explore the latest digital technologies and skills, develop proofs-of-concept and apply them to industry and public sector challenges.

Who we are

The Hartree Centre was created by UK Government to help businesses and public sector organisations accelerate the adoption of high performance computing (HPC), big data analytics, artificial intelligence (AI) and quantum technologies. We play a key role in realising UK Government's Industrial Strategy by stimulating applied digital research and innovation, creating value for the organisations we work with and generating economic and societal impact for the UK. We are proud to be part of UK Research and Innovation.

What we do

- Boost productivity and innovation for industry
- Offer training and skills development
- Provide insights into future technologies
- Give tailored business development support

