

## **New color technology to cut online shopping returns**

**A project to create new color technology aims to reduce the number of unnecessary returns of items bought online by making the colors in videos and images on online product pages more accurate.**

Fashion e-commerce is today a multi-billion-dollar market, and it is expected to double by 2028. However, according to industry research, approximately 30% of shipped goods are returned, with the primary reasons being the wrong size or color. In particular, customers perceive colors from pictures and videos on e-commerce websites differently, leading to significant waste from unnecessary packaging, shipping, and clothes destruction.

The new project aims to reduce the return rate in fashion industry e-commerce by 25% by 2030 due to color issues or 6% in total returns. If successful, the new technology could set new industry standards by building new AI-driven color-editing solutions for photos and video for professional use.

The project is a collaboration between photography software company Capture One, Aalborg University of Denmark, and the Technical University of Denmark (DTU) and is backed by the Danish Innovation Fund with over €1.8 million.

“We are aiming to develop new AI-based tools for coloring video clips for fashion and e-commerce that will help create higher accuracy and reduce the number of returns because of color, thereby cutting unnecessary waste.” – Bjørn Thorup, Product Manager, Capture One.

The project combines world-class researchers in the fields of AI and photonics with the industry-leading software within color editing, Capture One, which is used today by major fashion retailers like ASOS, H&M, and Boozt for their ecommerce photography. This collaboration provides a unique opportunity to develop new compression formats, HDR (High Dynamic Range) monitor support, and coloring of moving objects to achieve the most natural colors.

"We're incredibly excited about using Capture One's unique color science in an industry that is looking for ways to become more sustainable. Playing our part in creating the future of ecommerce, a future with far less waste and many more satisfied customers, is hugely important to us." - Rafael Orta, CEO, Capture One

To achieve its goals, the project has identified five specific objectives; to create a breakthrough software product that can handle the coloring of video that matches colors in images, determine how human color perception differs from video to photos, develop new AI techniques to track moving objects in video, create new video compression techniques for color preservation, and finally, develop new color rendering techniques for HDR/WCG (Wide Color Gamut) and new high-end monitors.

### **About the project:**

Innovation Fund Denmark investment: 14.479.014 DKK

Total budget: 25.357.348 DKK

Duration: 3 ½ years

Official title: AI-ColorFashion (AICF)

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**About Capture One**

Born out of a passion for photography, Capture One provides photographers with the tools to collaborate with clients and creatives, achieve the highest quality photograph, and bring their visions to life. Today, Capture One offers the fastest tethered shooting in the industry, an intuitive and efficient workflow, unparalleled image quality with support for almost 600 camera and lens profiles, true-to-life color processing, and precise editing and collaborative tools.

Starting out as a RAW image converter for Phase One cameras in 1998 Capture One became an independent company in 2020 after Phase One was acquired by Nordic private equity investor Axcel. With the decision to separate the software division from the camera manufacturer, Capture One could carve its own path as the definitive photography software company.

Capture One is on a journey to become the most powerful ecosystem of creative and collaborative tools with workflow freedom spanning across multiple devices, letting professional photographers work from anywhere with anyone.

**About Aalborg University**

Aalborg University is a mission-oriented university with campuses in Aalborg, Esbjerg and Copenhagen. Our extensive expertise, intensive interdisciplinarity and proactive commitment to society give us unique opportunities to work on complex challenges. In conjunction with the world around us, we define and take part in missions that help solve those challenges. We strive to cultivate world-leading research environments that link scientific excellence with mission-oriented commitment and to show how research is strengthened by active collaboration with the world at large. We also strive to create foundational, interdisciplinary, and transformative research that helps solve the world's most complex and pressing challenges. Through our partnerships with external actors, we strive to set agendas with innovative solutions to relevant problems and to make use of our knowledge to create tangible value for our partners and the world around us.

In the AICF project AAU is represented by the Visual Analysis and Perception (VAP) lab, which for the past decade has conducted world-class basic and applied research within computer vision and AI. Currently the lab consists of 20+ researchers who are researching different aspects of especially automatic analysis of image and video data.

**About DTU Electro**

DTU Electro employs more than 300 skilled researchers with competencies in electrical and photonics engineering. As a department, we strive towards creating sustainable energy and a greener internet and applications thereof. Working with the industry and public organisations is one

of our top priorities to find and implement new solutions to our society based on electrical and photonics engineering as their key enabling technologies.

We aim to offer education, research, and innovation of the highest standard, and our focus on application-oriented research enables us to work across many engineering disciplines and research areas. We have a close collaboration with researchers from all over the world.

Academically DTU Electro is at the forefront of the technical and natural sciences with new initiatives within several internationally demanding engineering disciplines. Our facilities are state-of-the-art, and internationally we are at the top. This includes optical communication technology as well as coding and visual communication. DTU Electro is known for its ability to translate research into new technologies through close cooperation between partners from the university world, business and public authorities.

Innovation is an integral part of DTU Electro's activities. Through student innovation, business collaboration and commercialization of the department's knowledge and inventions, DTU Electro works to create value in society in the form of growth, new knowledge-based companies, and jobs.