Queen Mary University of London

Innovate UK

RT software

Company: RT Software

Knowledge Transfer Partnership: To develop advanced AI computer vision techniques for use in RT Software's sports analysis software, *Tactic*.

Have you ever wondered how sports analysis systems, like those used on football TV shows or the training rooms of football clubs, are able to illustrate the position of players with graphics that appear to be right there on the pitch? That's the challenge for graphics developer, RT Software. Already a leader in applying AI techniques to sports analysis, RT Software had developed several key features enabled by AI, including automatic pitch calibration and player in-fill. Wanting to build on the success of these features, RT Software entered a Knowledge Transfer Partnership (KTP) with Queen Mary to expand the use of AI to other areas of their software.

Challenge

The rise in the use of AI has led to an ever-increasing demand from sports professionals and broadcasters for more information from sports. The extraction of this information from video can provide in-depth analysis, data and statistics that can inform both fans and sports professionals. Improving the capabilities of the analysis and the speed at which this can be delivered is essential to satisfy audiences who are keen to gain insights into the strategies and tactics of the game.

The knowledge and expertise of Queen Mary's MultiMedia and Vision Research (MMV) Group, headed up by Professor Ebroul Izquierdo, is contributing to RT Software being able to expand upon its existing expertise with AI techniques by adopting the latest research available.

Process to Solution

The MMV conducts cutting-edge research in multimedia systems technology and deep machine learning, which has the capacity to transform the capabilities of the real-time graphics and sports industry.

RT and Queen Mary are completing the first stage of the KTP that will provide an AI driven camera tracking system, which will be combined with RT software's existing process to deliver improved accuracy and reliability.

It is hoped that this development will become a foundation for further enhancement with commercial prospects. Specifically, the next step will be to develop 'event detection', a technology which will enable features such as identifying players (e.g. goalkeepers and teams), types of play (shot on goal, throw in, corner etc.) or team formations (for example, a blocking formation of four defenders).

> *"RT Software has always been at the cutting edge of sports technology and Queen Mary are world leading experts in the field of AI/ML for video analysis. We believe that this partnership will continue the work we are already doing in this field and help us deliver advanced and innovative tools and workflows for our customers and more importantly, lead to new and commercially important markets."*

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