

Master 2 /Engineering diploma internship

Subject: Learning long-range correspondences for video editing

All video editing tools suffer from a limitation: capturing long-range correspondences. This is a difficult problem, due to many factors: the change of appearance of the object, the large motion and the occlusions. We propose here to develop a new method to learn the

Our team has developed a solution to summarize a video portion as a form of mosaic. We propose to leverage this technology to learn, with deep learning, long range correspondences, as inspired by a recent paper (http://openaccess.thecvf.com/content_CVPR_2019/html/Wang_Learning_Correspondence_From_the_Cycle-Consistency_of_Time_CVPR_2019_paper.html). The method may learn versatile descriptors that can be used for additional videos or learn content-specific descriptors.

Ultimately, the method can lead to learning correspondences between shots for the same actor, so that artists can perform multi-shot editing and get consistent editing of the same actor.

The internship takes place at Interdigital research in Rennes, in collaboration with Technicolor postproduction facilities in Los Angeles, CA.



Skills: computer vision, machine/deep learning, python

Keywords: video editing, machine learning, long-range correspondences, movie postproduction

Where:

The internship will take place at Interdigital research, Rennes, France. The site was formerly Technicolor research and has been purchased by Interdigital in June 2019. The internship takes place within a collaboration with Technicolor postproduction.

How to apply:

Send an email to Pierre.Hellier@interdigital.com

Interdigital

Lots of companies bring innovations that improve a single product. At InterDigital, our inventions help improve every product in the markets we participate in, from the most basic to the most advanced, transforming industries and improving products and services that are part of our daily lives.

InterDigital is one of the world's largest pure research, innovation, and licensing companies, with more than 300 engineers around the world. Our focus is on research and development with pervasive impact: mobile technologies that underpin smartphones, networks and services via global standards, and video technologies that are the foundation for today's most popular products and services. Wireless and video – arguably the two most impactful technologies today.

On the wireless side, InterDigital has been a pioneer for four decades, with our engineers designing and developing a wide range of advanced technologies that are used in digital cellular and wireless products and networks, including 2G, 3G, 4G and IEEE 802-related products and networks. Today, we're a leader in 5G research and beyond, a thought leader in our industry and, over the course of the last two decades, the source of more than 30,000 contributions to key global standards.

In video, our existing efforts in key standards have been dramatically expanded with the addition of the Research & Innovation operation of global market leader Technicolor in 2019. With a video R&D heritage spanning decades, while yielding one of the leading innovation portfolios in the industry, what is now InterDigital R&I is a world leader in video research, pioneering new capabilities and making more than 100 contributions to key global video standards. In 2019, the company incorporated a world-class video and AI research team and an established portfolio of video expertise to expand our work in wireless and video technologies and consumer electronics.

Our track record of research & development is matched by our fair licensing practices, which are a model for the industry, and our willingness to partner with virtually anybody in developing new capabilities that will improve technology for consumers and businesses around the world.