Master Theses in Sports Broadcasting Enhancements and Virtual Studios Interactions

Image courtesy of Sky UK, Canal+ Spain, Fox Sports US, TV Globo Brasil, ARD Germany and Fox News US

Vizrt Switzerland

The R&D group of Vizrt Switzerland ([www.vizrt.com](http://www.vizrt.com), formerly known as LiberoVision) develops 3D sports analysis and graphical enhancement tools for TV broadcasters around the world. We are driven by constant innovation with the goal to facilitate the work of the production crew, and to give maximum flexibility to the editors while striving to enhance the viewer’s experience.

Virtual TV studios, where the live broadcast is enhanced with virtual graphics, screens and even characters, have been a key technology from the beginning. Over the last years we significantly improved rendering quality, preparation speed, flexibility, and automation ultimately leading to novel broadcasting tools brought to market. Most recently, we introduced a series of tools to create virtual studios that not only augment the broadcast itself, but also sensibly improve the viewer’s experience.

One of the key components of a successful and plausible virtual studio is seamless interaction with the virtual content. At present, the type of interactions which are possible in augmented TV studios are limited by many factors, including lighting conditions, screen sizes and minimum instrumentation requirements. However, during the last years, boosted by tremendous progress in portable computing research, ubiquitous sensors, such as depth cameras or inertial measurement units, are changing the way we look at and interact with the real world. We believe that this can also benefit virtual content interactions, leading to better virtual studios, and consequently to higher quality broadcasts.

Our success is also related to a tight relationship with ETH Zurich and on creative student projects. In the past, we have been supervising many successful Master theses, which often led to fundamental core technologies of new features. We offer challenging and exciting tasks in an optimal setting. For instance, you can take advantage of our code base that already provides a lot of functionality, or use the ETH hosting group resources, so that you can directly focus on the novel components of your thesis. Furthermore, you are co-supervised by both a PhD/PostDoc at ETH and a PhD/Software Engineer at Vizrt, combining excellent research know-how from ETH with our technological background. Gaining experience in the software development industry during your thesis is an added value on top of getting insights into the world of media production.

In 2014/2015, we have new Master thesis topics in different areas such as gesture-based distant screens interactions, continuous virtual content manipulation, virtual studios interaction and many more. If you are a Master student looking for an interesting and challenging Master Thesis, please contact Remo Ziegler ([rziegler@vizrt.com](mailto:rziegler@vizrt.com), 0442776507) or Fabrizio Pece ([fabrizio.pece@inf.ethz.ch](mailto:fabrizio.pece@inf.ethz.ch)), so that we can arrange a meeting to talk about the most recent topics.

Requirements. The ideal candidate will have a background in Computer Vision and Software Engineering. Solid programming skills, especially on vision and AR related topics, and an interest in hands-on development and experimentation is also a requirement. Programming languages: C/C++. Machine Learning experience is an optional skill.