The focus of the Visual Computing Laboratory is to develop new algorithms and architectures for applications in the areas of Computer Vision and Machine Learning.
Migration
According to the International Organization for Migration (IOM), over a million persons have arrived in Europe since January 2015 with many of them fleeing conflict zones in Syria and Iraq.
Over the past two years, the European Union has received people fleeing conflict zones outside Europe on a scale unprecedented for Europe since World War II. In the multi-faceted challenge of integrating new arrivals, new solutions are needed to cope with the continuous augmenting migration flows.

Media & Content Convergence
In the pre-digital era the media industry had clear boundaries among different platforms (e.g. newspapers, TV, radio). The content was prepared with a certain medium in mind and large effort was required to migrate content from one medium to another. The digital era brought new opportunities for convergence of the different communication and delivery platforms as well as new media platforms that provide personalized and engaging experiences.

e-health & Nutrition
e-Health is the employment of Information and Communication Technologies (ICT) in Healthcare Services, constituting the main mechanism to improve their efficiency and effectiveness. e-Health is an emerging field of medical informatics and public health, referring to health services and information delivered or enhanced through ICT technologies. VCL has been a key-role partner in several e-Health projects, conducting Research and Development of novel and efficient e-Health technologies.

4D Reconstruction & TeleImmersion
Tele Immersion (TI) refers to an emerging Future Internet (FI) technology that can support realistic interpersonal communications allowing remote users to share activities and interact within shared simulated environments.
With this technology the restrictions imposed by geographical location are lifted at that fine line separating the real world from the virtual, offering an all-around immersive experience, where the actual 3D appearance of all peers will be embedded.

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e-Learning & Gamification
Gamification aims to facilitate learning and encourage motivation through the use of game elements, mechanics and game-based thinking. Its main goal is to engage and motivate learners to become active participants of the learning process. In other words, gamification is based on the assumption that the game experience can be translated to an educational context towards the goals of facilitating learning and influencing student behavior. Games promote extrinsic and intrinsic motivation through the setting up of goals and rewards.

Internet of Things & Robotics
Internet of Things (IoT) is the convergence of the Internet with smart objects or "things belonging to Internet" to exchange the real-world information. Now the Internet is moving out from Internet of people to the Internet of everything. Billions of devices expected to connect to the Internet in future that will require a well manageable mechanism where the objects can sense and behave accordingly by themselves.

Security
The goal of security research is to develop innovative solutions able to assist Law Enforcement Agencies (LEAs) in their everyday tasks, to increase the citizens’ feeling of security while maintaining a good balance between security and freedom. Focus areas include but are not limited to protecting critical infrastructures and reacting to natural and man-made disasters, preventing and investigating organised crime and terrorism, improving border security, digital security, privacy and data protection.