Department of Computer Science & Information Engineering
Computer Vision, CS Education and AI Supported STEAM Education

The VIPLab focuses on research and development of machine intelligent algorithms for solving real-world problems. Furthermore, we integrate and develop AI-IT systems to foster CS and STEAM education, with emphasis on young learner (K-12 students).

Areas of Interest and Study
Face/Gesture Detection & Recognition
Speech Processing & Recognition
Machine Learning
Programming Learning Theory
Language Learning Theory
CS Education, Steam Education

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Background:
PhD in Computer Science & Engineering
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Ministry of Education

Computer Vision Research

- ### Head-free Eye Tracking
  Eye tracking is a technology to track where a person is looking, which involves detecting the presence and focus of the user. This technology allows for hands-free interaction with computing devices and has a broad range of real-world applications.

- ### Face & Facial expression Recognition
  Face detection is a technology to identify one or more person in the visual image/video. The process includes face detection, feature detection, and matching. Extension to facial expression identification has many important applications.

CS/STEAM Education Research

- ### Computational Thinking: Teaching & Assessment
  Computational Thinking (CT) skills are essential in the development of computer applications, but is also used to support problem solving across all disciplines. This research focus on methodology and practice of teaching, learning & assessing CT skills, especially for the K-12 students.

- ### AI Supported STEAM Education
  This research focus on Integration of AI technologies (e.g. computer vision, speech processing, machine learning) to enhance team-based lab activities for STEAM subject areas.