Course title: Image based biometry

Course code: 63554

ECTS: 6

Professor: Peter Peer

Master's program

Prerequisite knowledge:

-   Programming skills (at least at the intermediate level)
-   Introductory course to artificial intelligence
-   Introductory course to computer vision

Short course description:

The course relies mostly on computer vision, as most biometrics technologies are based on it. Students interested in cutting edge technology, much of which is still in a research stage, are the intended target for the course. The main content (will evolve due to developments in the field):

-   Biometrics basics
-   Biometrical modalities
-   Structure of a typical biometric system
-   Recognition/verification/identification
-   Metrics
-   Conditions for correct comparisons of the systems (databases, frameworks)
-   Performance and usefulness of the systems
-   Computer vision as the foundation of the biometric systems
-   Fingerprint
-   Iris
-   Face
-   Multi-biometric systems / multi-modality / fusions
-   Key problems of modalities/systems (research challenges)

The lectures introduce the approaches and explain their operation. At tutorial the knowledge is applied to practical problems in mostly Python and open source tools.

Student work tentatively includes three assignments and a final exam. The deadlines for the three assignments are approximately around beginning to mid of November, beginning to mid of December and beginning to mid of January.