

DIPLOMA THESIS TOPIC

Author of thesis: **Damián Sova**

Study programme: Open Informatics

Scope: Scope for Open Informatics

Topic: **Automated neural network learning for higher accuracy human skeleton detection under realistic conditions**

Length of thesis: 2,5–4 AA

Guides to writing a thesis:

1. The aim of this thesis is to analyze the problem of image detection using neural networks and to design a neural network model for human skeleton detection in real conditions.
2. Analyze the current state of the art in human skeleton detection, i.e., methods, approaches, available datasets.
3. Design a neural network model using available approaches (BodyPoseNet – NVIDIA, MediaPipe PoseNet – Google, ViTPose) for human skeleton detection. As part of the solution to this item, create a reference dataset (image dataset for skeleton detection).
4. Implement the proposed solution using freely available technologies. Use the Apple iPhone 14 Pro, Lidar, as a possible extension in the 3D level.
5. Evaluate your own solution and formulate options for further development.