Tárgyleírás

Tárgy neve: Advanced Deep Network Development

Tárgyfelelős neve: Lőrincz András

Tárgyfelelős tudományos fokozata: CSC

Tárgyfelelős MAB szerinti akkreditációs státusza: AT

Az oktatás célja angolul / Aim of the subject:

Knowledge

- The student discovers and gets acquainted with diverse architectures, and learns about different applications.

Abilities:

- The course enables the student for researching and tracking the literature and helps to deepen her/his knowledge in diverse ways that include deepening the knowledge in mathematics, physics, and control among others, depending on the student's goals. The course helps the student to choose to find topics and methods that fit her/his capabilities and interests and can be conducted in the Project Laboratory courses, future diploma work, together with the information about missing knowledge pieces to be filled in later studies.

Attitude:

- They follow professional and technological developments in their IT field.
- They are committed to lifelong learning and are open to acquiring new IT competencies.

Autonomy, responsibility:

- They take responsibility for their professional decisions made in their IT-related activities.
- They undertake to meet deadlines and to have deadlines met.
- They bear responsibility for their own work as well as for the work of their colleagues they work together with in a project.
- Regarding mission critical IT systems, they can be entrusted with developing and operational responsibilities that are in accordance with their professional competencies.

Az oktatás tartalma angolul / Major topics:

Key application fields, such as

- components of affective computing, such as facial expression and emotion estimation

- human-machine interaction, human parameter estimation, such as body pose, head pose, hand pose, gaze, and blinking estimation methods,
- image and speech processing methods,
- multi-agent systems,
- sparse coding and spiking neurons,
- semantic maps,
- robotic issues

A számonkérés és értékelés rendszere angolul / Requirements and evaluation:

Mixed assessment, exam

Irodalom / Literature:

Ian Goodfellow and Yoshua Bengio and Aaron Courville: Deep Learning. MIT Press, 2016. Hardcover: ISBN: 9780262035613, eBook: ISBN: 9780262337434

Aurélien Geron: Hands-On Machine Learning with Scikit-Learn and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems O'Reilly Media, Inc. 2017. ISBN: 1491962291

Josh Patterson and Adam Gibson: Deep Learning: A Practitioner's Approach. O'Reilly Media, Inc. 2017. ISBN: 1491914254

Sayan Pathak, Roland Fernandez, and Jonathan Sanito, Deep Learning Explained, MOOC edX, https://www.edx.org/course/deep-learning-explainedmicrosoft-dat236x

Andrew Ng: Machine Learning Yearning, https://www.goodreads.com/en/book/show/30741739-machine-learning-yearning