**Universitatea Transilvania din Brașov**

ADMISSION TO DOCTORAL STUDIES        Session September 2022

Field of doctoral studies: Computers and Information Technology
Doctoral supervisor: Prof. Dr. Mat. Andonie Razvan

## TOPICS FOR THE ADMISSION TO DOCTORAL STUDIES

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| TOPIC 1:  Machine Learning for Synthetic Data Generation |
| We have a sample data set and want to generate from it a synthetic dataset. Synthetic data should reflect the distributions satisfied by the sample data, but should not contain any disclosive records. The generated dataset will be employed to train machine learning models. |
| Recommended bibliography: Neural Networks and Statistical Learning, Ke-Lin Du, M.N.S. Swany, Springer, Second Edition, 2019 |

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| TOPIC 2:  Context-Sensitive Visualization of Deep Learning Natural Language Processing (NLP) Models |
| NLP  Transformer  context-sensitive  visualization  methods. |
| Recommended bibliography: Neural Networks and Statistical Learning, Ke-Lin Du, M.N.S. Swany, Springer, Second Edition, 2019 |

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| TOPIC 3:  Deep Learning for Time-Series Prediction |
| Deep learning architectures to accommodate the diversity of time-series datasets across different domains. |
| Recommended bibliography: Neural Networks and Statistical Learning, Ke-Lin Du, M.N.S. Swany, Springer, Second Edition, 2019 |

Doctoral supervisor,

Prof. Dr. Mat. Andonie Razvan

Signature

Coordinator of the field of doctoral studies,

Prof. Dr. Eng. Sorin Aurel Moraru

Signature