SIMONA KOCOUR

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EDUCATION

Czech Technical University   *2024 – ongoing*
PhD candidate, topic: 3D scene representation   *Prague, Czech Republic*
Supervisor: Dr. Torsten Sattler

ELLIS PhD program   *2024 – ongoing*
Co-supervisor: Prof. Dr. Siyu Tang (ETH Zurich)

Masaryk University   *2017 – 2019*
Master of Mathematics   *Brno, Czech Republic*
Thesis: Matrices and their application in statistics

Masaryk University   *2014 – 2017*
Bachelor of Mathematics   *Brno, Czech Republic*
Thesis: The bootstrap and related methods

WORK EXPERIENCE

Czech Institute of Informatics, Robotics and Cybernetics   *Apr 2024 - ongoing*
Researcher   *Prague, Czech Republic*
- part of Spatial Intelligence Group led by Dr. Torsten Sattler
- research objective: Novel 3D scene representation with ability to control the level of detail
- training models for semantic 3D scene understanding
- working with NeRF and Gaussian Splatting scene representation
- using PyTorch

Emplifi   *Nov 2020 - Mar 2024*
Machine Learning Researcher   *Prague, Czech Republic*
- Followed high impact papers and apply the methods into our company's product
- worked with large data sets from social media using PySpark, AWS, and Databricks
- lead, and managed my projects, followed by presenting results to C-level
- NLP - BERT, RoBERTa, DeepPavlov - built pipeline and fine-tuned models for classification tasks
- LLM generation - built summarization and short text generation pipelines using GPT
- behaviour scoring in time - built classification model with loss function emphasising customer behaviour with reflection on time

Aures Holdings   *Aug 2019 - Oct 2020*
Data Scientist   *Prague, Czech Republic*
- solved business tasks using ML algorithms in Python and SQL
- algorithmic pricing - built model for pricing goods automatically using general regression from Scikit-Learn
- behavioural scoring - built classification model using XGBoost

TECHNICAL SKILLS

Machine Learning:	3D Computer Vision, Neural Rendering, NLP PyTorch, TensorFlow
Software & Tools:	Python, R Docker, Git End-to-End Development, Software Prototyping
Data Processing:	AWS, Databricks, Elasticsearch, Presto, SAS PySpark, SQL
Languages:	Slovak (native) English, Czech (full professional proficiency) German (intermediate)

EXTRA-CURRICULAR

Presented my most successful project Behavioural Scoring in Time, with developed loss function, at the VUT University in Brno.

Organised internal ML hackathon with over 30 participants at Emplifi. Prepared all materials, data, guidance, validation statistics, and testing pipeline.

Regularly present ML topics in front of local ML community.