Mikita **Kulbitski**

First Year Master's Student at the University of Helsinki in Computer Science, Algorithms
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Work experience

- **Junior Machine Learning Engineer** (March-May 2021)
  Worked on the improvement of game control on a VR-helmet (applied CNN methods for lidar data from Iphone 12 for better prediction of position and orientation of the control ring on the hand).
- **Research Student at the Moscow Institute of Physics and Technologies** (Oct-Nov 2020)
  Engineered solutions for abstractive summarization of articles. Combined text vectorization approaches (RNN with attention, transformers, BERT) and topical modelling to generate descriptive summaries.
- **Research Student in Acronis** (Feb-May 2020)
  Studied space indexing methods for Approximate Nearest Neighbor Search. Worked with LSH (local sensitive hashing), dimensionality reduction, tree-based approach of indexing, vector quantization.

Education

- **Moscow Institute of Physics and Technology** (2017 - 2021)
  - BSc in Radio Engineering and Computer Technologies | **GPA: 4.7/5**
- **University of Helsinki** (2021 - curr.)
  - MSc in Computer Science, Algorithms
- **Mail.ru Big Data Academy** | Machine Learning ▪ Algorithms ▪ Advanced C++ (fall semester 2019)
- **Deep Learning Coursera specialization** | from Andrew Ng and deeplearning.ai

Projects

- **Knowledge distillation in Python |** research on the recognizing hand signs (from 0 to 5):
  - imitated ResNet50 by simple NN (learned on ResNet50 predictions)
  - achieved an increase in precision accuracy from 88% (simple NN trained on 1-hot labels) to 92% (imitating NN)

  https://github.com/kulbitsky99/knowledge_distillation
- **C++ 2D-game |** space topic:
  - OOP structure (satellite, asteroid, bullet, earth classes are inherited from the basic class)
  - Memory is allocated once before starting the game (alive/dead status for used objects)

  https://github.com/kulbitsky99/2D-Game-SpaceShifts-
- **Bachelor thesis (currently in Russian) |** Applying Graph NN's to recommendation systems
  https://github.com/kulbitsky99/Bachelor-diploma

Deep Learning study projects (using Tensorflow/Keras/Pytorch):

- CV:
  - CNN, ResNet50 for categorical classification
  - Object detection system with YOLO principles
  - Face recognition system (based on FaceNet, DeepFace)
  - Generation of artistic images with Neural Style Transfer
- Sequence models, NLP:
  - Shakespeare poetry generation based on GRU and LSTM units
  - Jazz improvisation with LSTM
  - Sentiment analysis of sentences
  - Neural machine translation with Attention
- GAN basics:
  - Generating digits with GAN's

Hard skills

- **Mathematics**
  Computational Statistics ▪ Algorithms ▪ Data Structures ▪ Probability Theory ▪ Linear Algebra
- **Data Engineering**
  PySpark ▪ Pandas ▪ SQL
- **Technologies**
  Linux ▪ Terminal ▪ LaTeX ▪ Git ▪ Makefile ▪ Cmake ▪ Docker ▪ Travis ▪ Virtual Environments

Soft skills

- English level: C1 (IELTS band score from December 2020: 7.5)
- Organizer of educational events for students on a university level
- High school basketball team captain