Shamil Iakubov : LinkedIn Email : yakubov.sha@gmail.com

Machine Learning experience

- **Top 2% solution in the Featured Simulation Kaggle Competition "Lux AI"**: Ranked 19th out of 1186 teams as a solo participant. Team shmyak. Links: Github; Leaderboard. The solution is based on imitation and reinforcement learning off policy actor-critic algorithm.
- **Reinforcement learning algorithms implementation. Example** : Custom training loops implementation for several reinforcement algorithms (TensorFlow): different versions of DQN, categorical DQN, off policy actor-critic algorithms with dueling networks, n-step update, off policy policy gradient correction and other improvements. It uses RAY to distribute calculations and DM Reverb as a data buffer. Some versions of it include sparse nets and residual convolution nets.
- **TF records pipelines preparation**: Data preparation before training using tf.data API for efficient sampling from the Google Cloud Storage. Example.
- **Online courses**: Deep Learning specialization, Machine Learning, Bayesian Statistics.

Other relevant numerical experience

- **Helmholtz-Zentrum in Geesthacht** Geesthacht, Germany
  PhD student *2017 - 2020*
  - **Numerical studies**:
    Study 1. A 1-dimensional biogeochemical tracers transport model. It calculates transport of some oceanographic parameters by depth.
    Study 2. A model, which predicts carbon dioxide absorption capabilities of the ocean according to some oceanographic parameters. It involves optimization with lmfit.
    Study 3. A modeling study about controlling factors of the atmosphere - seawater carbon dioxide exchange in the area of the North Sea.
  - **Data visualization**: Visualization and processing of oceanographic data from the North Sea using Pandas, Matplotlib, etc. Example.
- **Institute of Oceanology** Moscow, Russia
  Research engineer *2014 - 2017*
  - **Signal processing study**: It proposes the method to predict 'Freak waves' based on waves parameters. The study uses cluster analysis to categorize waves to groups and then uses Fourier and Wavelet analysis to study properties and features of these groups.

Programming Skills

- **Languages**: Python (Tensorflow, Keras, Numpy, Pandas), FORTRAN, LaTeX

Recent publications

- Yakubov, S.; Protsenko, E. Alkalinity Generation in the Coastal Area, the Case of the Wadden Sea. Preprints 2021, 2021020036 (doi:10.20944/preprints202102.0036.v1)
- Yakushev, E.V.; Wallhead, P.; Renaud, P.E.; Ilinskaya, A.; Protsenko, E.; Yakubov, S.; Pakhomova, S.; Sweetman, A.K.; Dunlop, K.; Berezina, A.; Bellerby, R.G.J.; Dale, T. Understanding the Biogeochemical Impacts of Fish Farms Using a Benthic-Pelagic Model. Water 2020, 12, 2384. (doi:10.3390/w12092384)
- Yakubov, S.; Wallhead, P.; Protsenko, E.; Yakushev, E.; Pakhomova, S.; Brix, H. A 1-Dimensional Sympagic–Pelagic–Benthic Transport Model (SPBM): Coupled Simulation of Ice, Water Column, and Sediment Biogeochemistry, Suitable for Arctic Applications. Water 2019, 11, 1582. (doi:10.3390/w11081582)
- Pakhomova, S.; Yakushev E.; Protsenko E.; Rigaud S.; Cossa D.; Knoery J.; Couture R.; Radakovitch O.; Yakubov S.; Krzeminska D.; Newton A. Modeling the Influence of Eutrophication and Redox Conditions on Mercury Cycling at the Sediment-Water Interface in the Berre Lagoon. Frontiers in Marine Science 2018, 5, 291. (doi:10.3389/fmars.2018.00291)

Education

- **Moscow State University** Moscow, Russia
  Specialist, Oceanography *2003 – 2008*