Attention Is All I Need[1]

Oleg Sedukhin

Novosibirsk, Russia
E-mail: *sedol.mong@mail.ru*, Telegram: *@olegs1339*

Github: *https://github.com/sedol1339*

I'M LOOKING FOR A research position to solve challenging machine learning problems and make scientific publications. Prefer team work, ideally as a member of experienced research group. Prefer remote work or semi-remote from Novosibirsk.

1. Education

Master's degree from Faculty of Information Technologies of Novosibirsk State University.

2. Work experience and contributions

(i) Engineer in Huawei Russian Research Institute (apr. 2022 – mar. 2024), worked on tabular machine learning and computer vision tasks.
(ii) Senior research developer in a startup Siberian Neuronets (may 2024 - now), work on speech recognition and text generation.

In **tabular machine learning**, I developed a benchmark for autoML systems. I tested neural, linear and boosting models and their various tweaks, researched methods for robust model comparison, feature generation, automatic feature type inference, tabular distributional shifts. I validated a hypothesis that plain baselines (like CatBoost) may be no worse than state-of-the-art tabular autoML systems, if early stopping end ensembling are properly designed.

In **computer vision**, I researched semi-supervised few-shot object detection, including dataset preparation, various tweaks and augmentations, two-stage learning, developing evaluation metrics. I managed to achieve pretty good few-shot detection performance with fine-tuning Cascade R-CNN on top of EVA-02 backbone. After all, I realized that the task of few-shot detection may come in a lot of very different forms, some of which are unexplored in the ML literature and may require completely different approaches.

In **speech recognition**, I developed evaluation methods and postprocessing for smart home command recognition and fine-tuned speech recognition models for Russian language.

[1] This resume is stylized as a famous paper named "Attention is all you need"

Fig. 1: The author.

3. Skills and studying

In **machine learning**, my core skill by own assessment is understanding the difficulties in model evaluation, to maximize the connection between test metric and real performance in production. I am continuously trying to gain a deep understanding of machine learning to find weak spots and limitations of modern algorithms to improve them and reliability of their evaluation.

(i) I almost fully read **Probabilistic Machine Learning: An Introduction** by Kevin P. Murphy, 2023 (a version with my commentaries at this link).
(ii) I'm half read **Reinforcement Learning Textbook** by Sergey Ivanov, 2022 (a version with my commentaries at this link).
(iii) Since last year, I write short summaries of some of the papers that I read (more than 500 papers for now at this link).
(iv) I have published several longreads on Habr.

In **programming**, I am familiar of Python, Numpy, Pytorch, Tensorflow/Keras, Huggingface, Pandas, Polars, Scikit-learn, Matplotlib, Catboost, Slurm, Detectron/MMDetection (and to varying degrees other tools).