ALINA PLESHKOVA

Machine Learning Specialist

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EXPERIENCE

Machine Learning Specialist

Research Institute of Automation, Informatization and Communications in Railway Transport (JSC NIIAS)

Oct 2021 – Dec 2022 | Saint Petersburg, Russia

Development and implementation of integrated intelligent railway operations control and automation systems

- Decreased computer vision models inference time up to 2 times by applying Group Fisher Pruning method
- Studied and compared various methods for railway signs recognition
- Created synthetic datasets for recognition of fights on a railway platform
- Implementation of machine learning papers for computer vision tasks
- **Python**, **PyTorch**, **PaddlePaddle**, **Wandb**, **Git**, **Linux**

Intern Researcher

JetBrains Research

July 2020 – Aug 2020 | Saint Petersburg, Russia

Music2Dance project realization

- Created music-dance pairs dataset
- Developed a model for genre classification of music
- Implemented and modified Music2Dance model, that allows to generate dance movements from music
- Successfully trained the model to generate waltz dance movements
- **Python**, **PyTorch**, **Librosa**, **Madmom**

EDUCATION

Master

Higher School of Economics

Sept 2019 – June 2021 | Saint Petersburg, Russia

Applied Mathematics and Informatics, Enterprise Software Development

GPA: 8.91 / 10

Bachelor

St. Petersburg State University

Sept 2015 – June 2019 | Saint Petersburg, Russia

Applied Mathematics and Computer Science, Computational Stochastics and Statistical Models

GPA: 4.6 / 5

SKILLS

- **Programming Languages:** Python
- **Frameworks:** PyTorch, Sklearn, Pandas, NumPy, Hugging Face, PyTorch Lightning, PaddlePaddle, Wandb
- **Tools:** Git, LaTeX
- **Languages:** English (Intermediate), Russian (Native)

PROJECTS

Matching texts and images using a transformer-like architecture

JetBrains Research

Oct 2020 – June 2021

- Developed a transformer-like model for the matching text and images task
- The model is capable to be trained even with limited computational resources and lack of training data
- **Python**, **PyTorch Lightning**, **Hugging Face**

Study of skill-discovery reinforcement learning

JetBrains Research

March 2020 – May 2020

- Modified RL algorithms (DADS, VALOR and DIAYN) to speed up learning process
- **Python**, **PyTorch**

Study of L-optimal designs for a two-dimensional exponential model

St. Petersburg State University

Oct 2017 – May 2019

- Constructed L-optimal designs for the Cobb-Douglas model which allows to increase accuracy of least squares method estimation
- **Maple**, **Matlab**

SCIENTIFIC SEMINARS

Gave talks about agent systems and reinforcement learning

Feb 2020 – May 2021

- Adversarial Soft Advantage Fitting: Imitation Learning without Policy Optimization (2021) [Link]
- Multi-agent Social Reinforcement Learning Improves Generalization (2020) [Link]
- Self-Tuning Deep Reinforcement Learning (2020) [Link]

REFERENCES

- Dmitrii Leliuhin – Head of Computer Vision Center of JSC NIIAS
  Contact: dleliuhin@yandex.ru
- Petr Shpilev – Associate Professor at the Department of Computational Stochastics and Statistical Models at St. Petersburg State University
  Contact: pitshp@hotmail.com