

Roman Beltiukov

REINFORCEMENT LEARNING RESEARCHER

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Skills

Machine Learning

Reinforcement Learning, Classic ML, Deep Learning, Computer Vision (+ OpenCV), TensorFlow, PyTorch

Programming

Python, C#, Rust, SQL, LaTeX

System administration

Windows Server, Linux (Debian-based), AD, Virtualization (Hyper-V, SCVMM, Xen), Network (Routing, Switching, Cisco), Data Storage systems (SAN)

Languages

English, Russian

Other

Git, Docker, Bash, Powershell, Databases, Hadoop, Hive, PySpark

Experience

On-Device Machine Learning Researcher

St. Petersburg, Russia

HUAWEI

Mar. 2020 - now

- Researching onboard Machine Learning techniques, network distillation, pruning, mobile device inference.
- Designing ML-based system for Android devices targeting all Huawei device users.
- Implementing a prototype for the system mentioned above and doing a performance review.

Research intern

St. Petersburg, Russia

JETBRAINS RESEARCH

Oct. 2019 - now

- Reproduced several articles in order to confirm achieved results.
- Implemented a novel approach for Prioritized Experience Replay (currently under testing)
- Prepared and held several talks about current progress in Reinforcement Learning field

Python tutor

St. Petersburg, Russia

HIGHER SCHOOL OF ENGINEERING

Sep. 2018 - Oct. 2020

- Designed several Python courses for different kinds of listeners.
- Semi-automated home task checking with unit tests and GitHub.
- Wrote a task book for Python learners with tasks ordered by complexity.
- Recorded video lectures and prepared courses for online education.

System administrator

St. Petersburg, Russia

HIGHER SCHOOL OF ENGINEERING

Jul. 2015 - Jun. 2019

- Implemented failover solution for the data storage network.
- Expanded and augmented existing virtual machines infrastructure.
- Deployed advanced network and infrastructure monitoring services (like IDS, IPAM, centralized logging, etc.).
- Expanded domain and infrastructure to several branch offices.
- Migrated multiple services to docker.
- Created solution for HTML5-based access to virtual machines on Hyper-V/SCVMM hosts.

Education

SPbU (Saint-Petersburg University)

St. Petersburg, Russia

PH.D. IN COMPUTER SCIENCE

Sep. 2019 - now

- Thesis: developing methods based on world model creation for implementing the agent's memory in reinforcement learning.

SPbPU (Peter the Great Saint-Petersburg Polytechnical University)

St. Petersburg, Russia

M.S. IN COMPUTER SCIENCE

Sep. 2017 - Aug. 2019

- Thesis: Optimizing Q-learning with K-FAC algorithm

SPbPU (Peter the Great Saint-Petersburg Polytechnical University)

St. Petersburg, Russia

B.S. IN COMPUTER SCIENCE

Sep. 2013 - Aug. 2017

- Thrice student of the year
- Thesis: application of generative adversarial networks to music generation

Additional education & Courses

- **Machine learning** Coursera (by Andrew Ng), score: 97.3%
- **Probability theory** Stepik (by Computer Science Center)
- **Statistics** Stepik (by Computer Science Center)
- **Astrophysics** Coursera (by SPbPU), score: 88.9%
- **Practical_DL** Yandex
- **Practical_RL** Yandex
- **mlcourse.ai** OpenDataScience
- **dlcourse.ai** OpenDataScience

Honors & Awards

INTERNATIONAL

- | | | |
|------|---|--------------------------|
| 2018 | Winner (individual) , Student's competition "World-IT-Planet", Cloud Computing track by Huawei | <i>Tyumen, Russia</i> |
| 2018 | Runner-up (2nd place) of the challenge (in-team) , HackJunction, "Mobility" by QOCO | <i>Helsinki, Finland</i> |
| 2017 | Winner (individual) , Student's competition "World-IT-Planet", Cloud Computing track by Huawei | <i>Sochi, Russia</i> |
| 2017 | Challenge winner (in-team) , HackJunction, "Robots, learning machines" by Eficode and Bitville | <i>Helsinki, Finland</i> |

DOMESTIC

- | | | |
|------|--|--------------------|
| 2018 | Special award (in-team) by Institute of Bioinformatics , BioHack 2018 by EPAM Systems | <i>SPb, Russia</i> |
| 2017 | Winner (in-team) , Hackathon "Make your university 20.35" | <i>SPb, Russia</i> |

Certifications

OPENEDG

- 2019 **Certified Associate in Python Programming**, Verification Code: 6iTz.Eo4D.sR6J

MICROSOFT

- 2020 **Microsoft Certified: Azure AI Engineer Associate**, Certification number: H455-0627
- 2018 **Microsoft Certified Solutions Expert: Cloud Platform and Infrastructure**, Certification number: G878-5366
- 2018 **Microsoft Certified Solutions Associate: Windows Server 2016**, Certification number: G878-5139
- 2017 **Microsoft Certified Professional**, Certification number: G511-2245

CISCO

- 2018 **Cisco CCNA Instructor**, Network Academy Instructor
- 2017 **Cisco Certified Network Associate Routing and Switching**, Certificate verification number: 432903347147JRBH

HUAWEI

- 2017 **Huawei Certified Network Associate Storage**, Certificate number: 010100901680806862091409

Publications

Optimizing Q-Learning with K-FAC Algorithm
Roman Beltiukov
Analysis of Images, Social Networks and Texts, 2020, Cham

Open-source contributions

digestbot @ ODS.AI

- Project: slack bot for finding hot topics and important messages.
- Primary maintainer and architect of the project.
- Contribution: architecture, crawler code, UI code, internal logic, deploy, and support.

Tortilla @ maybe-hello-world

- Project: HTML5 web interface for Hyper-V virtual machine with role-based access (based on Apache Guacamole).
- Primary maintainer and architect of the project.
- Contribution: architecture, UI, backend (except Java wrapper for Guacamole), deploy.

PowerShell @ Microsoft | Proposed and added additional arguments to commands for working with PFX certificates.

Posh-ACME @ rmbolger | Fixed incorrect error ignoring, which prevented automation of several tasks.