

# Roman Beltiukov

REINFORCEMENT LEARNING RESEARCHER

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## Skills

**Machine Learning** Reinforcement Learning, Classic ML, Deep Learning, Computer Vision (+ OpenCV), TensorFlow, PyTorch, Hadoop, Hive, PySpark

**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

## Experience

### On-Device Machine Learning Researcher

HUAWEI

St. Petersburg, Russia

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

JETBRAINS RESEARCH

St. Petersburg, Russia

Oct. 2019 - Sep. 2020

- 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

HIGHER SCHOOL OF ENGINEERING

St. Petersburg, Russia

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

HIGHER SCHOOL OF ENGINEERING

St. Petersburg, Russia

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)

PH.D. IN COMPUTER SCIENCE

St. Petersburg, Russia

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)

M.S. IN COMPUTER SCIENCE

St. Petersburg, Russia

Sep. 2017 - Aug. 2019

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

### SPbPU (Peter the Great Saint-Petersburg Polytechnical University)

B.S. IN COMPUTER SCIENCE

St. Petersburg, Russia

Sep. 2013 - Aug. 2017

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

## Additional education & Courses

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<b>Machine learning</b>	Coursera (by Andrew Ng), score: 97.3%
<b>Probability theory</b>	Stepik (by Computer Science Center)
<b>Statistics</b>	Stepik (by Computer Science Center)
<b>Astrophysics</b>	Coursera (by SPbPU), score: 88.9%

## Honors & Awards

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### INTERNATIONAL

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

### DOMESTIC

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

## Certifications

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### OPENEDG

2019	<b>Certified Associate in Python Programming</b> , Verification Code: 6iTz.Eo4D.sR6J
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### MICROSOFT

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

### CISCO

2018	<b>Cisco CCNA Instructor</b> , Network Academy Instructor
2017	<b>Cisco Certified Network Associate Routing and Switching</b> , Certificate verification number: 432903347147JRBH

### HUAWEI

2017	<b>Huawei Certified Network Associate Storage</b> , Certificate number: 010100901680806862091409
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## Publications

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

## Open-source contributions

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### 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.