Denis Yarats

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ABOUT

I am a PhD student in Machine Learning at New York University and Facebook AI Research.
My research interests broadly include Reinforcement Learning, Optimal Control, and Robotics.

EDUCATION

New York University *2018 - Present*
PhD in Computer Science, Courant Institute *New York, NY*
Research in Reinforcement Learning, Optimal Control, and Robotics

Belarusian State University *2010 - 2011*
M.S. in Computer Science and Mathematics *Minsk, Belarus*

Belarusian State University *2005 - 2010*
B.S. in Computer Science and Mathematics *Minsk, Belarus*

WORK EXPERIENCE

Facebook AI Research 2016 - Present
Research Engineer *New York, NY*

I research in the areas of Reinforcement Learning, Optimal Control, and Robotics.

Quora 2013 - 2016
Staff ML Engineer *Mountain View, CA*

I led a team of ML engineers at Quora. Our main goal was to develop and deploy ML algorithms that could distribute Quora's knowledge base to our users. My responsibilities were broad in scope, ranging from developing probabilistic models for language understanding, to implementing cutting-edge ranking methods to improve personalization. I provided scalable and performant implementations for various ML algorithms, some of my work was open sourced.

Bing, Microsoft 2011 - 2013
Software Engineer *Bellevue, WA*

I worked as a ranking and relevance engineer on the search team. During my tenure at Bing, I enhanced performance and accuracy of the entity conflation algorithm by integrating random decision trees. I also improved latency of the data ingestion pipeline by providing highly optimized and distributed implementations of several core algorithms.

Yandex 2011
Software Engineer *Moscow, Russia*

I focused on building an algorithm to predict car traffic in Moscow, with the goal to improve the city's severe road congestion. I developed a forecasting algorithm based on logistic regression, that leveraged both offline data and real-time signals to reliably predict traffic jams.

PUBLICATIONS

Improving Sample Efficiency in Model-Free Reinforcement Learning from Images *September 2019*
D. Yarats and A. Zhang and I. Kostrikov and B. Amos and J. Pineau and R. Fergus
Submitted to ICLR 2020

The Differentiable Cross-Entropy Method *September 2019*
B. Amos and **D. Yarats**
Submitted to ICLR 2020

Generalized Inner Loop Meta-Learning *September 2019*
E. Grefenstette and B. Amos and **D. Yarats** and
P. M. Htut and A. Molchanov and F. Meier and D. Kiela and K. Cho and S. Chintala
Submitted to ICLR 2020

Hierarchical Decision Making by Generating and Following Natural Language Instruction *June 2019*
H. Hu* and **D.Yarats*** and Q. Gong and Y. Tian and M. Lewis
NeurIPS 2019

Quasi-hyperbolic momentum and Adam for deep learning *October 2018*
J. Ma and **D.Yarats**
ICLR 2019

Hierarchical Text Generation and Planning for Strategic Dialogue *February 2018*
D.Yarats and M. Lewis
ICML 2018

Deal or No Deal? End-to-End Learning for Negotiation Dialogues *June 2017*
M. Lewis and **D. Yarats** and Y. Dauphin and D. Parikh and D. Batra
EMNLP 2017

Convolutional Sequence to Sequence Learning *March 2017*
J. Gehring and M. Auli and D. Grangier and **D. Yarats** and Y. Dauphin
ICML 2017

PRESS COVERAGE

Teaching AI to plan using language in a new open-source strategy game *September 2019*
https://ai.facebook.com/blog/-teaching-ai-to-plan-using-language-in-a-new-open-source-strategy-game

Deal or no deal? Training AI bots to negotiate *June 2017*
https://code.facebook.com/posts/1686672014972296/deal-or-no-deal-training-ai-bots-to-negotiate

A novel approach to neural machine translation *May 2017*
https://code.facebook.com/posts/1978007565818999/a-novel-approach-to-neural-machine-translation

TEACHING

Introduction to Reinforcement Learning *October 2018*
Lecturer, Belarusian State University *Minsk, Belarus*

Introduction to Deep Learning *2016 - 2018*
Teaching assistant, Facebook *Menlo Park, CA*

Discrete Mathematics and Algorithms *September - November 2011*
Lecturer, Yandex School of Data Analysis *Minsk, Belarus*

TALKS

Hierarchical Text Generation and Planning for Strategic Dialogue *October 2018*
AI Ukraine *Kiev, Ukraine*

Hierarchical Text Generation and Planning for Strategic Dialogue *July 2018*
ICML 2018 *Stockholm, Sweden*

Hierarchical Text Generation and Planning for Strategic Dialogue *July 2018*
Conversational Intelligence Summer School *Moscow, Russia*

Convolutional Sequence to Sequence Learning *November 2017*
Treehouse Talk at CLMS, University of Washington *Seattle, WA*

Convolutional Sequence to Sequence Learning *October 2017*
AI Ukraine *Kiev, Ukraine*

ACHIEVEMENTS

ACM ICPC World Final *2011*
Participant *Orlando, FL*

Google Code Jam European Final *2008*
Participant *Zurich, Switzerland*

SKILLS

PyTorch, Python, C++, CUDA, LaTeX