Polina Zablotskaia

https://github.com/zpolina

Education

The University of British Columbia — **Vancouver, Canada** — **September 2017 - January 2020**

- **MSc** in Computer Science. **Courses**: "Machine Learning and Data Mining", "Machine Learning (advanced)", "Probabilistic Programming", "Social and Information Networks", "Computer Animation", "Multimodal Learning with Vision, Language and Sound". **GPA 90.3%**
- **Research assistant** in Computer Vision lab, working under supervision of Prof. Leonid Sigal. My research mainly focuses on applications of generative models in computer vision tasks.
  I'm also a member of the **Vector Institute** in Toronto.
- **Teaching Assistant** for "Computer Vision", "Basic Algorithms and Data Structures" and "Introduction to Software Engineering" courses.

St. Petersburg Polytechnic University — **St. Petersburg, Russia** — **September 2011 - July 2015**

BSc in Information and Computer Science. Diploma with distinction. **GPA 4.8/5.0**
Bachelor's thesis: "Decoding algorithm of polar codes by successive elimination with directed search".

Employment & Research

Machine Learning Research Intern — **Borealis AI, Vancouver, Canada** — **September 2019 - present**

Working in the team of Andreas Lehrmann and Greg Mori.

Software Engineering Intern in Research — **Google MTV, USA** — **April 2019 - August 2019**

Translate team. Improving document and sentence embedding models to learn better representations in Translate Parallel Data Mining, by using context features and different attention mechanisms. Tensorflow, Python, C++

Site Reliability Engineering Intern — **Google Zurich, Switzerland** — **May 2018 - August 2018**

Social Graph SRE Team. I have improved existing SSTableService to use a dynamic resharding. Python, C++

Software Engineering Intern — **Google Warsaw, Poland** — **May 2017 - August 2017**

Google Cloud Autoscaler team. Developed framework for measuring Google Cloud Autoscaler quality. Python, C++

Research Intern — **EPFL, Switzerland** — **June 2016 - September 2016**

I worked on "ABC: A System for Sequential Synthesis and Verification" (Berkeley):

- Time of SAT-based expansion reduced twice by implementing algorithm more efficiently. Started working on expansion algorithm with recursive approach (complexity $O(n \log n)$ instead of $O(n^2)$). C
- Implemented scripts for better analysis of ABC's results (plots, statistics, etc). Perl, Linux
- Introduced a new "Multioutput SOP" command for ABC. C

Research Intern — **The University of Luxembourg** — **November 2015 - July 2016**

- Impact of weather on human mobility: Extracted data from social network and forecast website. Preprocessed and cleaned data, built statistics and found correlations between types of venues and the weather. Python, APIs
- Luxembourg Social Map: Social characteristics of Luxembourg represented on a map and also human mobility map. Cleaned social network data with text mining and then visualized obtained data. Python, CARTO, Gephi

Software Engineering Intern — **Motorola Solutions, Russia** — **March 2014 - August 2014**

- Implemented an Android app for reading barcodes. Automating User Interface tests for Android apps. Android SDK, Java, XML
- Created automated scripts for testing and collecting statistics about new devices based on mobile ad hoc networks.

Publications & Posters

- Polina Zablotskaia, Aliaksandr Siarohin, Leonid Sigal and Bo Zhao, "DwNet: Dense warp-based network for pose-guided human video generation", Demo, *In 30th British Machine Vision Conference* (2019).
- Polina Zablotskaia, Bo Zhao and Leonid Sigal, "Generating dance videos from a single image", *WIML@NeurIPS* (2018).
- Jun Pang, Polina Zablotskaia, and Yang Zhang, "On impact of weather on human mobility in cities", *In Proc. 17th International Conference on Web Information System Engineering - WISE'16, Lecture Notes in Computer Science, ©Springer-Verlag* **247-256**, 10042 (2016).

Projects

- **Evaluation based Inference for Generative Adversarial Networks.** Formulated decomposable loss function to model arbitrary compositions of implicit generative models and proposed language constructs that enable the user to easily express such compositional models. Python, PyTorch (2018)
- **StackGAN with different losses.** The goal of the project was to improve StackGAN model for Text-to-Image synthesis task by exploring different types of loss functions, like perceptual losses for generator or adversarial losses. Python, PyTorch (2018)
- **Challenge "Learn to Run".** Project idea was to create a controller for the NIPS 2017 challenge "Learn to Run". To achieve this goal, we used reinforcement learning solutions to learn a policy that generates an appropriate actions given information from the state. Python, PyTorch (2017)

Awards and Scholarships

- Vector Research Grant (2018-2019)
- Computer Science Merit Scholarship from the University of British Columbia (2017)
- The University of British Columbia International Tuition Award (2017)
- DAAD Study Scholarship for Graduates of All Disciplines (2017) (declined)
- Scholarship from Luxembourg Ministry of Foreign Affairs (2015 –2016)
- Scholarship from Peter the Great St.Petersburg Polytechnic University awarded for excellent academic results during whole period of studies (2011 - 2015)

Additional experience

- Volunteered at NeurIPS 2018.
- Successfully accomplished International Computer Vision Summer School 2018.
- Computer Science Centre student in St. Petersburg, Russia. Institution supported by JetBrains, Yandex Data School and PDMI of the Russian Academy of Science (2016 - 2018)
- Helped in organizing of the 26th International Conference on Field-Programmable Logic and Applications (2016)
- Won the regional stage and participated in the Russian final of the competition Microsoft Imagine Cup (2015)
- Microsoft Research "Machine Learning and Intelligence" Summer School. Deep Learning, Computer Vision, Model-Based Machine Learning, Bayesian methods, ML Hackathon (2015)
- Swedish Summer School in Computer Science organized by KTH (2015)
- Microsoft Research "Doing Research in the Cloud" Summer School. Hadoop on Microsoft Azure, scalable algorithms in the cloud and workflow in cloud applications (2014)

Languages and Technologies

- C++, Python, R.
- PyTorch, TensorFlow // Visual Studio, PyCharm, CLion // MySQl, Microsoft SQL Server // Android Development // Windows, Linux // Git, Bitbucket