Scientific workshop "Big Data Analytics" - Meeting #3133

Scientific seminar 2020-02-06 Planning the semester

2020-02-06 15:13 - Evgeniy Pavlovskiy

Status:	New	**Start date:**	2020-02-06
Priority:	Middle (Средний)	**Due date:**	2020-02-06
Assignee:	Evgeniy Pavlovskiy	**% Done:**	0%
Target version:		**Spent time:**	0.00 hour
Time:	16:20 - 17:00	**Participants (Wiki):**	
Place:	0207	**Participants:**	Alexander Rusnak, Antoine, Stéphane, Michel Logeais, Darya Pirozhkova, Evgeniy Pavlovskiy, Geoffroy de Felcourt, Jetina Tsvaki, Kaivalya Pandey, Kirill Kalmutskiy, Nikita Nikolaev, Oladotun Oluwagbemi , Omid Razizadeh, Raphael Blankson, Richard Fambon, Sergey Garmaev, Thibault Kollen, Vasiliy Baranov

Description

1 Schedule

Seminars_schedule

2 Requirements

25 minutes for one presentation.
Main requirements to presentation:

- to be prepared in LaTeX (try use https://overleaf.com),
- to be short, understandable, clear and convenient,
- no more than 20 minutes for content deliver and 5 for questions,
- references on the last slide

3 Topics

Each student has to present a research and part of his thesis.

Opened list of cutting-edge topics:

Topic	Link	Reporter	Scheduled
[ ]Zero and Few shot learning	Schonfeld, E., Ebrahimi, S., Sinha, S., Darrell, T., & Akata, Z. (2019). Generalized zero-and few-shot learning via aligned variational autoencoders. In Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (pp. 8247-8255). https://arxiv.org/pdf/1812.01784.pdf	**Nikita Nikolaev**	20-Feb
[ ] ERNIE	Zhang, Z., Han, X., Liu, Z., Jiang, X., Sun, M., & Liu, Q. (2019). ERNIE: Enhanced language	**Daria Pirozhkova**	27-Feb

	representation with informative entities. arXiv preprint arXiv:1905.07129.		
[ ] Reservoir Computing	Design Strategies for Weight Matrices of Echo State Networks	**Sergey Garmaev**	27-Feb
[ ] Hybrid VAE for NLG	Semeniuta, S., Severyn, A., & Barth, E. (2017). A hybrid convolutional variational autoencoder for text generation. arXiv preprint arXiv:1702.02390.	**Elena Voskoboy**	5-Mar
[ ] NASNet and AutoML	AutoML for large scale image classification and object detection, http://arxiv.org/abs/1707.07012	**Oladotun Aluko**	12-Mar
[ ]BERT-DST	Chao, G. L., & Lane, I. (2019). Bert-dst: Scalable end-to-end dialogue state tracking with bidirectional encoder representations from transformer. arXiv preprint arXiv:1907.03040.	**Alexey Korolev**	16-Apr
[ ]	Radford, A., Wu, J., Child, R., Luan, D., Amodei, D., & Sutskever, I. (2019). Language models are unsupervised multitask learners. OpenAI Blog, 1(8), 9. https://cdn.openai.com/better-language-models/language_models_are_unsupervised_multitask_learners.pdf	**Alexander Rusnak**	02-Apr
[ ]Variational Circuits	Chen, S. Y. C., & Goan, H. S. (2019). Variational Quantum Circuits and Deep Reinforcement Learning. arXiv preprint arXiv:1907.00397.	**Kirill Kalmutskiy**	12-Mar
[ ]	https://pennylane.ai/qml/zreferences.html#huggins2018towards Kosuke Mitarai, Makoto Negoro, Masahiro Kitagawa, and Keisuke Fujii. Quantum circuit learning. 2018. arXiv:1803.00745.	**Andrey Yashkin**	5-Mar

[ ]Reynolds Averaged Turbulence Modeling using Deep Neural Networks with Embedded Invariance.	Julia Ling and Jeremy Templeton.Sandia National Laboratories. https://www.cambridge.org/core/journals/journal-of-fluid-mechanics/article/reynolds-averaged-turbulence-modelling-using-deep-neural-networks-with-embedded-invariance/0B280EEE89C74A7BF651C422F8FBD1EB	**Omid Razizadeh**	26-Mar
[ ] Tensor Networks in QML	William Huggins, Piyush Patel, K Birgitta Whaley, and E Miles Stoudenmire. Towards quantum machine learning with tensor networks. 2018. arXiv:1803.11537.	**Raphael Blankson**	30-Apr
[ ] Tensor Networks	Edwin Stoudenmire and David J Schwab. Supervised learning with tensor networks. In D. D. Lee, M. Sugiyama, U. V. Luxburg, I. Guyon, and R. Garnett, editors, Advances in Neural Information Processing Systems 29, 4799–4807. Curran Associates, Inc., 2016. URL: http://papers.nips.cc/paper/6211-supervised-learning-with-tensor-networks.pdf.	**Richard Fambon**	
[ ] PennyLane.ai	Overview of the framework	**Raphael Blankson** as master topic	28-May
[ ] Jasper	Li, J., Lavrukhin, V., Ginsburg, B., Leary, R., Kuchaiev, O., Cohen, J. M., ... & Gadde, R. T. (2019). Jasper: An end-to-end convolutional neural acoustic model. arXiv preprint arXiv:1904.03288.	**Geoffroy de Felcourt**	19-Mar
[ ] Weight Uncertainty	Blundell, C., Cornebise, J., Kavukcuoglu, K., & Wierstra, D. (2015). Weight uncertainty in neural networks. arXiv preprint arXiv:1505.05424.	**Antoine Logeais**	9-Apr
[ ]	Wen, Y., Vicol, P., Ba, J., Tran, D., & Grosse, R. (2018).	Thibault Kollen	2-Apr

	Flipout: Efficient pseudo-independent weight perturbations on mini-batches. arXiv preprint arXiv:1803.04386.		
[ ]	Lample, G., & Charton, F. (2019). Deep learning for symbolic mathematics. arXiv preprint arXiv:1912.01412. Facebook	**Mikhail Liz**	5-Mar
[ ] Layer-wise relevance propagation	Montavon, G., Binder, A., Lapuschkin, S., Samek, W., & Müller, K. R. (2019). Layer-wise relevance propagation: an overview. In Explainable AI: Interpreting, Explaining and Visualizing Deep Learning (pp. 193-209). Springer, Cham.	**Rohan Rathore**	9-Apr
[ ] Deep Reinforcement Learning		**Kaivalya Pandey**	26-Mar
[ ] Complex Conv	Complex Convolution. IEEE	**Ravi Kumar**	30-Mar
[ ]	Understanding mixup training methods https://ieeexplore.ieee.org/document/8478159	**Jetina Tsvaki**	16-Apr
[ ]	Deep Learning based Approach to Reduced Order Modelling... https://arxiv.org/abs/1804.09269	**Alix Bernard**	26-Mar
[ ] Deep learning: A Generic approach for extreme condition traffic		**Watana Pongsapas**	12-Mar
[ ]	Uzkent B, Sheehan E, Meng C, Tang Z, Burke M, Lobell D, Ermon S. Learning to interpret satellite images in global scale using wikipedia. arXiv preprint arXiv:1905.02506. 2019 May 7.	**Owen Siyoto**	9-Apr
[ ] Implicit weight uncertainty in neural networks	Nick Pawlowski, etc	**Alexander Donets**	16-Apr
[ ] Brain Tumor	Brain Tumor Sementation Using	**Dinesh Reddy**	19-Mar

	Deep Learning by Type Specific Sorting of Images		
[ ] Blockchain for AI	Salah, K., Rehman, M. H. U., Nizamuddin, N., & Al-Fuqaha, A. (2019). Blockchain for AI: Review and open research challenges. IEEE Access, 7, 10127-10149.	**Abhishek Saxena**	9-Apr
From previous semester (not reported yet)			
[ ]Manifold MixUp	Manifold Mixup: Better Representations by Interpolating Hidden States. URL: https://arxiv.org/pdf/1806.05236v4		
Quantum			
[ ]DisCoCat model	Grefenstette E. Category-theoretic quantitative compositional distributional models of natural language semantics //arXiv preprint arXiv:1311.1539. – 2013. URL: https://arxiv.org/abs/1311.1539		
[ ]DisCoCat toy model	Gogioso S. A Corpus-based Toy Model for DisCoCat //arXiv preprint arXiv:1605.04013. – 2016. URL: https://arxiv.org/pdf/1605.04013.pdf	Thibault Kollen	04-June
[ ]A Quantum-Theoretic Approach to Distributional Semantics	Blacoe W., Kashefi E., Lapata M. A quantum-theoretic approach to distributional semantics //Proceedings of the 2013 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies. – 2013. – С. 847-857. URL: http://www.aclweb.org/anthology/N13-1105		
Speech			
[ ]Tacotron 2	Shen J. et al. Natural tts synthesis by conditioning wavenet	Geoffroy de felcourt	04-June

		on mel spectrogram predictions //2018 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP). – IEEE, 2018. – С. 4779-4783. URL: https://arxiv.org/pdf/1712.05884.pdf		
	Natural Language Processing			
	[ ]Skip-thoughts, Infersent, RandSent - Facebook	1. Kiros R. et al. Skip-thought vectors //Advances in neural information processing systems. – 2015. – С. 3294-3302. URL: https://arxiv.org/pdf/1506.06726.pdf 2. Conneau A. et al. Supervised learning of universal sentence representations from natural language inference data //arXiv preprint arXiv:1705.02364. – 2017. URL: https://arxiv.org/abs/1705.02364 3. Wieting J., Kiela D. No Training Required: Exploring Random Encoders for Sentence Classification //arXiv preprint arXiv:1901.10444. – 2019. URL: https://arxiv.org/pdf/1901.10444.pdf	Antoine Logeais	04-June
	[ ]BigARTM	Vorontsov K. et al. Bigartm: Open source library for regularized multimodal topic modeling of large collections //International Conference on Analysis of Images, Social Networks and Texts. – Springer, Cham, 2015. – С. 370-381. URL: http://www.machinelearning.ru/wiki/images/e/ea/Voron15aist.pdf	Richard Fambon	04-June
	[ ]	Selsam, D., Lamm, M., Bünz, B., Liang, P., de Moura, L., & Dill, D. L. (2018). Learning a SAT solver from single-bit		

		supervision. arXiv preprint arXiv:1802.03685.		

Papers with code			
[ ]Deep-speare	Deep-speare: A Joint Neural Model of Poetic Language, Meter and Rhyme https://paperswithcode.com/paper/deep-speare-a-joint-neural-model-of-poetic	**Elizaveta Tagirova**	**19-Dec**

4 Topics of master thesis

Opened list of reports on master thesis (statement of work, review, and results):

Reporter	Topic	Scheduled
1st year students, review, method		
1 to-be-listed		-
1 Raphael Blankson	PennyLane.ai overview	28-May
2 Kirill Kalmutskiy	Coursework	30-Apr
2st year students, results		
1 Razizadeh Omid		
2 Siyoto Owen		
3 Munyaradzi Njera		
4 Kozinets Roman		
5 Tagirova Elizaveta		
6 Tsvaki Jetina		
7 Ravi Kumar		

5 At fault

These students still didn't selected a paper to report or doesn't assigned to a time slot:

1st year students

- **noname**: refer, master

2nd year students

- **noname**: refer, master

6 Presence

The requirements of the seminar are:

- AS.BDA.RQ.1) deliver presentation: (i) on the topic of master thesis, (ii) review of a recognized paper.
- AS.BDA.RQ.2) attend not less than 50% of classes.

Here is a table of Presence conducted from meeting minutes (see minutes as issues in first column of the Seminars schedule.

History

#1 - 2020-02-06 15:55 - Evgeniy Pavlovskiy

- Description updated

- Participants Alexander Rusnak, Darya Pirozhkova, Evgeniy Pavlovskiy, Jetina Tsvaki, Kaivalya Pandey, Kirill Kalmutskiy, Nikita Nikolaev, Oladotun Oluwagbemi , Omid Razizadeh, Raphael Blankson, Sergey Garmaev, Vasiliy Baranov added

#2 - 2020-02-09 17:08 - Evgeniy Pavlovskiy

- Description updated

#3 - 2020-02-09 17:11 - Evgeniy Pavlovskiy

- Due date changed from 2020-02-05 to 2020-02-06

- Start date changed from 2020-02-05 to 2020-02-06

- Time changed from 16:20 - 17:55 to 16:20 - 17:00

- Participants Antoine, Stéphane, Michel Logeais, Geoffroy de Felcourt, Richard Fambon, Thibault Kollen added

#4 - 2020-02-09 17:11 - Evgeniy Pavlovskiy

- Subject changed from Scientific seminar 2020-02-05 Planning the semester to Scientific seminar 2020-02-06 Planning the semester

#5 - 2020-02-10 09:47 - Evgeniy Pavlovskiy

- Description updated

#6 - 2020-02-10 09:52 - Evgeniy Pavlovskiy

- Description updated

#7 - 2020-02-11 02:09 - Omid Razizadeh

- Description updated

#8 - 2020-02-11 02:11 - Omid Razizadeh

- Description updated

#9 - 2020-02-11 02:14 - Omid Razizadeh

- Description updated

#10 - 2020-02-11 02:18 - Omid Razizadeh

- Description updated

#11 - 2020-02-12 09:37 - Geoffroy de Felcourt

- Description updated

#12 - 2020-02-12 15:39 - Evgeniy Pavlovskiy

- Description updated

#13 - 2020-02-12 15:43 - Evgeniy Pavlovskiy

- Description updated

#14 - 2020-02-12 16:08 - Evgeniy Pavlovskiy

- Description updated

#15 - 2020-02-12 17:58 - Antoine, Stéphane, Michel Logeais

- Description updated

#16 - 2020-02-12 21:33 - Thibault Kollen

- Description updated

#17 - 2020-02-13 15:33 - Evgeniy Pavlovskiy

- Description updated

#18 - 2020-02-13 15:36 - Evgeniy Pavlovskiy

- Description updated

#19 - 2020-02-13 15:38 - Evgeniy Pavlovskiy

- Description updated

#20 - 2020-02-13 15:48 - Evgeniy Pavlovskiy

- Description updated

#21 - 2020-02-13 16:32 - Evgeniy Pavlovskiy

- Description updated

#22 - 2020-02-13 16:33 - Evgeniy Pavlovskiy

- Description updated

#23 - 2020-02-13 16:35 - Evgeniy Pavlovskiy

- Description updated

#24 - 2020-02-13 16:38 - Evgeniy Pavlovskiy

- Description updated

#25 - 2020-02-13 17:43 - Evgeniy Pavlovskiy

- Description updated

#26 - 2020-02-13 17:49 - Evgeniy Pavlovskiy

- Description updated

#27 - 2020-02-13 17:56 - Evgeniy Pavlovskiy

- Description updated

#28 - 2020-02-13 18:30 - Evgeniy Pavlovskiy

- Description updated

#29 - 2020-02-13 19:44 - Alexander Rusnak

- Description updated

#30 - 2020-03-06 14:29 - Evgeniy Pavlovskiy

- Description updated

#31 - 2020-05-21 15:33 - Geoffroy de Felcourt

- Description updated

#32 - 2020-05-21 17:30 - Thibault Kollen

- Description updated

#33 - 2020-05-21 17:38 - Richard Fambon

- Description updated

#34 - 2020-05-21 17:49 - Antoine, Stéphane, Michel Logeais

- Description updated