Scientific workshop "Big Data Analytics" - Meeting #2435

Scientific seminar 2019-09-20 Planning the semester

2019-09-13 18:16 - Evgeniy Pavlovskiy

Status:	New	**Start date:**	2019-09-20
Priority:	Middle (Средний)	**Due date:**	2019-09-20
Assignee:	Evgeniy Pavlovskiy	**% Done:**	0%
Target version:		**Spent time:**	0.00 hour
Time:	18:10 - 20:00	**Participants (Wiki):**	
Place:	5239	**Participants:**	

Description

1 Schedule

Seminars_schedule

2 Requirements

25 minutes for one presentation.
Main requirements to presentation:

- to be prepared in LaTeX (or Jupyter Notebook with LaTeX inline),
- 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
General			
[ ]Zero-One shot Learning	Xian, Y., Lampert, C. H., Schiele, B., & Akata, Z. (2018). Zero-shot learning-a comprehensive evaluation of the good, the bad and the ugly. IEEE transactions on pattern analysis and machine intelligence. URL: https://ieeexplore.ieee.org/abstract/document/8413121	**Vladislav Panferov**	**19-Dec**
[x]MXNet DL framework	Chen T. et al. Mxnet: A flexible and efficient machine learning library for heterogeneous distributed systems //arXiv preprint arXiv:1512.01274. – 2015. URL: https://arxiv.org/pdf/1512.01274	**Oladotun Aluko**	~~**14-Nov**~~, **21-Nov**

[ ]	“Why Should I Trust You?” Explaining the Predictions of Any Classifier, https://arxiv.org/pdf/1602.04938.pdf, https://github.com/marcotcr/lime	**Rohan Kumar Rathore**	**5-Dec**
[ ]Manifold MixUp	Manifold Mixup: Better Representations by Interpolating Hidden States. URL: https://arxiv.org/pdf/1806.05236v4		
[ ]UMAP	McInnes, Leland and John Healy (2018). “UMAP: Uniform Manifold Approximation and Projection for Dimension Reduction”. In: ArXiv e-prints. arXiv: 1802.03426 [stat.ML]	**Alix Bernard**	**14-Nov**
Artistic Style	Gatys L. A., Ecker A. S., Bethge M. A neural algorithm of artistic style //arXiv preprint arXiv:1508.06576. – 2015.	**Elena Voskoboy**	**14-Nov**
EfficientNet	Tan M., Le Q. V. EfficientNet: Rethinking Model Scaling for Convolutional Neural Networks //arXiv preprint arXiv:1905.11946. – 2019.	**Owen Siyoto**	**26-Dec**
Fluid, Oil, Physics, Chemistry			
[ ]Data-driven predictive using field inversion	Parish, Eric J., and Karthik Duraisamy. "A paradigm for data-driven predictive modeling using field inversion and machine learning." Journal of Computational Physics 305 (2016): 758-774.	**Omid Razizadeh**	**31-Oct**
[ ]Predicting Oil Movement in a development System Using Deep Latent Dynamic Models	URL: Video: https://www.youtube.com/watch?v=N3iV-F4aqLA? Slides: https://bayesgroup.github.io/bmml_sem/2018/Temirchev_Metamodelling.pdf		
Faces			

[ ]SphereFace	SphereFace: Deep Hypersphere Embedding for Face Recognition URL: https://arxiv.org/pdf/1704.08063.pdf	**Mukul Vishwas**	
[x]Triplet Loss	https://arxiv.org/pdf/1503.03832.pdf	**Vassily Baranov**	**24-Oct**
[x]Style transfer SotA (state-of-the-art)	A Style-Based Generator Architecture for Generative Adversarial Networks. URL: https://arxiv.org/abs/1812.04948		
Performance of Word Embeddings	review and experience		
[x]CosFace	Wang H. et al. Cosface: Large margin cosine loss for deep face recognition //Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition. – 2018. – С. 5265-5274. URL: https://arxiv.org/pdf/1801.09414.pdf	**Mikhail Liz**	**19-Dec**
Quantum			
Supervised learning with quantum enhanced feature spaces	Havlíček V. et al. Supervised learning with quantum-enhanced feature spaces //Nature. – 2019. – Т. 567. – №. 7747. – С. 209. URL: https://arxiv.org/pdf/1804.11326.pdf	**Raphael Blankson**	**12-Dec**
FermiNet	Ab-Initio Solution of the Many-Electron Schr\\" odinger Equation with Deep Neural Networks, https://arxiv.org/pdf/1909.02487	**Kristanek Antoine**	**28-Nov**
[ ]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		
[x]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		
[ ]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		
Solving the Quantum Many-Body problem with ANN	Carleo G., Troyer M. Solving the quantum many-body problem with artificial neural networks //Science. – 2017. – Т. 355. – №. 6325. – С. 602-606. URL: https://arxiv.org/pdf/1606.02318	**Andrey Yashkin**	**21-Nov**
Economics			
Understanding consumer behavior	Lang T., Rettenmeier M. Understanding consumer behavior with recurrent neural networks //Workshop on Machine Learning Methods for Recommender Systems. – 2017. URL: https://doogkong.github.io/2017/papers/paper2.pdf	**Abhishek Saxena**, **Watana Pongsapas**	**?*, *31-Oct**
	Li X. et al. Empirical analysis: stock market prediction via extreme learning machine //Neural Computing and Applications. – 2016. – Т. 27. – №. 1. – С. 67-78.	**Kaivalya Anand Pandey**, **Rishabh Tiwari**	**21-Nov**, **12-Dec**
Speech			
[ ]Tacotron 2	Shen J. et al. Natural tts synthesis by conditioning wavenet 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		
BERT (Google)	Devlin J. et al. Bert: Pre-training of deep bidirectional transformers for language understanding //arXiv preprint arXiv:1810.04805. – 2018. URL: https://arxiv.org/abs/1810.04805	**Nikita Nikolaev**	**12-Dec**
Natural Language Processing			
[x]Text clustering	Xu J. et al. Self-taught convolutional neural networks for short text clustering //Neural Networks. – 2017. – Т. 88. – С. 22-31. URL: https://arxiv.org/abs/1701.00185	**Alexander Donets**	**21-Nov**
[x]Universal Sentence Encoder	Cer D. et al. Universal sentence encoder //arXiv preprint arXiv:1803.11175. – 2018. URL: https://arxiv.org/pdf/1803.11175.pdf	**Alexey Korolev**	**28-Nov**
[x]ULMFiT	Howard J., Ruder S. Universal language model fine-tuning for text classification //arXiv preprint arXiv:1801.06146. – 2018. URL: https://arxiv.org/pdf/1801.06146.pdf	**Alexander Rusnak**	**26-Dec**
ELMo	Peters M. E. et al. Deep contextualized word representations //arXiv preprint arXiv:1802.05365. – 2018. URL: http://www.aclweb.org/anthology/N18-1202	**Sergey Garmaev**	**7-Nov**
[ ]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		
[ ]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		
[ ]Vision and Feature Norm	Vision and Feature Norms: Improving automatic feature norm learning through cross-modal maps. URL: https://aclweb.org/anthology/N16-1071	**Dinesh Reddy**	**7-Nov**
[x]Reinforcement Learning	Human-level control through deep reinforcement learning	**Kirill Kalmutskiy**	**28-Nov**
	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.		
[ ]ERNIE	Enhanced Representation through Knowledge Integration. URL: https://arxiv.org/abs/1904.09223	**Mikhail Rodin**	**~~5-Dec~~ 26-Dec**

Papers with code			
Weight Agnostic Neural Networks	Weight Agnostic Neural Networks, Google, https://arxiv.org/abs/1906.04358	**Roman Kozinets**	**14-Nov**
SeqSleepNet	Phan H. et al. SeqSleepNet: end-to-end hierarchical recurrent neural network for sequence-to-sequence automatic sleep staging //IEEE Transactions on Neural Systems and Rehabilitation Engineering. – 2019. – Т. 27. – №. 3. – С. 400-410.	**Daria Pirozhkova**	**7-Nov**
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		
1 to-be-listed		-
2st year students		
1 Razizadeh Omid		**5-Dec**
2 Siyoto Owen		**26-Dec**
3 Munyaradzi Njera		**17-Oct**
4 Kozinets Roman		**14-Nov**
5 Tagirova Elizaveta		**19-Dec**
6 Tsvaki Jetina		**5-Dec**
7 Ravi Kumar		**12-Dec**

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 - 2019-09-26 11:43 - Evgeniy Pavlovskiy

- Description updated

#2 - 2019-09-26 11:47 - Evgeniy Pavlovskiy

- Description updated

#3 - 2019-09-26 18:26 - Evgeniy Pavlovskiy

- Description updated

#4 - 2019-09-26 18:28 - Evgeniy Pavlovskiy

- Description updated

#5 - 2019-09-26 18:29 - Evgeniy Pavlovskiy

- Description updated

#6 - 2019-09-26 18:30 - Evgeniy Pavlovskiy

- Description updated

#7 - 2019-09-26 18:39 - Evgeniy Pavlovskiy

- Description updated

#8 - 2019-09-26 18:40 - Evgeniy Pavlovskiy

- Description updated

#9 - 2019-09-26 18:45 - Evgeniy Pavlovskiy

- Description updated

#10 - 2019-09-26 18:47 - Evgeniy Pavlovskiy

- Description updated

#11 - 2019-09-26 18:56 - Evgeniy Pavlovskiy

- Description updated

#12 - 2019-09-30 18:32 - Evgeniy Pavlovskiy

- Description updated

#13 - 2019-10-03 17:04 - Evgeniy Pavlovskiy

- Description updated

#14 - 2019-10-10 17:06 - Evgeniy Pavlovskiy

- Description updated

#15 - 2019-10-10 17:56 - Evgeniy Pavlovskiy

- Description updated

#16 - 2019-10-17 13:38 - Evgeniy Pavlovskiy

- Description updated

#17 - 2019-10-17 15:30 - Elizaveta Tagirova

- Description updated

#18 - 2019-11-06 13:24 - Evgeniy Pavlovskiy

- Description updated

#19 - 2019-11-28 13:58 - Mikhail Rodin

- Description updated

#20 - 2019-12-06 16:49 - Evgeniy Pavlovskiy

- Description updated

#21 - 2019-12-06 16:56 - Evgeniy Pavlovskiy

- Description updated

#22 - 2019-12-12 14:48 - Evgeniy Pavlovskiy

- Description updated