

## SUPERVISOR'S REVIEW

on Le The Anh's dissertation  
"Deep Neural Network Models for Sequence Labeling and Coreference Tasks"  
submitted for the degree of candidate of technical sciences  
specialty 05.13.01 - System analysis, control theory, and information processing

Le The Anh

From 2017 Le The Anh works as a researcher in the iPavlov project at the Neural Networks and Deep Learning laboratory, MIPT. His main research topic is neural network models for the sequence labelling task with application to the natural language processing (NLP). Today, deep neural networks dramatically change computational linguistics and became a major approach in the field of NLP. Many NLP problems such as Named Entity Recognition, Part of Speech, Chunking, and others can be treated as sequence labeling tasks. In his work Anh proposed and studied a number of original extensions of existing neural architectures for sequence labelling in application to the named entity recognition, sentence boundary detection and coreference resolution tasks. He demonstrated high capabilities to acquire new knowledge and master complex machine learning methods.

The novel approaches introduced in the work of Le The Anh allowed to solve named entity recognition task for Russian and Vietnamese with the best available quality. A new method for sentence level representation made it possible to improve coreference resolution in Russian and English.

All the results of the study were timely presented at international conferences and published. Practical significance of developed models is supported by their publication as a part of the open-source NLP framework DeepPavlov. Part of the work was done and applied when Anh participated in an international AI competition Alexa Prize Socialbot Grand Challenge as a member of MIPT team. This demonstrate high practical value of the dissertation results.

In my opinion the dissertation satisfies the requirements of the Higher Attestation Commission, and Le The Anh deserves the award of the degree of candidate of technical sciences in the specialty 05.13.01 - System analysis, control theory, and information processing

Supervisor: \_\_\_\_\_

  
(signature)

\_\_\_\_\_ Mikhail Sergeevich Burtsev

(full name)

Academic degree, academic rank, and position \_\_\_\_\_

\_\_\_\_\_ candidate of physical and mathematical sciences,  
head of the laboratory

« 24 » June 20 20 г.



РУКИ

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ПОДПИСЬ ЗАВЕРЯЮ  
СПЕЦИАЛИСТ КАНЦЕЛЯРИИ  
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