

Recommendation for the defense of Ph.D. thesis

Ph.D. candidate: Ekaterina Egorova
advisor: Jan Černocký

I am happy that Ekaterina (Katia) Egorova has finished her thesis under my supervision, and that her long-years efforts have converged to the submission of doctoral dissertation at FIT BUT. The term “supervision” must be precised - Katia’s research was inspired by the previous work done in the lab by Igor Szoke, Mirko Hannemann and Stefan Kombrink, she received lots of ideas from the research head of our group Lukáš Burget and she had a short but very fruitful cooperation with Hari Krishna Vydana.

Katia’s thesis is in the area of automatic speech recognition, where the problem of out-of-vocabulary (OOV) words is still not solved and is the main obstacle for fast deployment of ASR in new scenarios, domains, and dialects. She compares three approaches, starting from a “classical” hybrid ASR system and going towards a modern attention-based end-to-end architecture.

Her results contributed to several projects running in the BUT Speech@FIT group, for example to IARPA Babel, the TACR “Neural networks for signal processing and speech data mining” (NOSICI), and IARPA MATERIAL. She was instrumental in BUT’s participation in EU Horizon 2020 project “Reception, Management and Integration of Third Country Nationals” (WELCOME) coordinated by UPF Barcelona, where she was the true lead of BUT efforts. Her work in WELCOME ranged from technical specifications, through ASR system development to participation in many project events, even in difficult COVID times, making BUT a significant contributor to the project.

Evaluations and challenges are key activities helping our lab to advance its know-how and assess objectively where we stand in the state-of-the-art. In 2018, she took part in BUT team participating in “Low resource Indian language ASR challenge”, organized by Microsoft India, involving building speech recognition systems on three Indian languages. The BUT team won the challenge.

She participated in international exchange: from July - October 2015, she did a research internship in Telefonica Barcelona (R&D group of Dr. Jordi Luque) and in October 2017, she spent two weeks at the Department of Computer Science of University of Crete (group of Prof. Yannis Stylianou), where she worked on ASR system and trained Crete colleagues in the use of ASR Kaldi toolkit.

Katia was also active pedagogically - she taught labs of Signals and Systems (Bc) and Speech Signal Processing (Masters). She also provided newcomers in the lab with instruction on tools, data, ASR systems, SGE computing and many others.

From a personal point of view, I appreciate Katia’s sense for team-work, helping the others and making the lab a good and funny place to work.

To conclude, **I fully recommend Ekaterina Egorova’s Ph.D. thesis for the defense.** I am wishing her all the best in future professional and personal life, great skiing and hiking trips, lots of good reading, and I am looking forward to future cooperation with her.

In Brno, August 29th 2022