



## Michal Borsky

Speech Research Scientist

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**GitHub:** <https://github.com/RanoRaraku/>

**Publication Record:**  
<https://scholar.google.com/citations?hl=en&user=VdcF9moAAAAJ/>

I have a PhD in speech recognition and my passion is everything related to speech: production, perception, automatic processing, or extracting linguistic and paralinguistic information. I have 8 years of experience in research, development and deployment of solutions for the purpose of speech processing, speech-to-text, speech-to-speech and speech in medicine. My vision is to develop technologies to solve real-world problems which can improve people's lives.

## RELEVANT SKILLS

DSP / ML / Deep Learning

Python / PyTorch

HTK / KALDI / K2 / Lhotse

Linux admin / AWS

Bash / Shell / Perl / MATLAB

Principal Investigator / Research Team Lead / Supervisor

## PROFESSIONAL EXPERIENCE

### Speech Research Scientist

Meaning.Team

Jan 2022 – Jun 2023

- Facilitated training of a speech-to-speech conversion system. Worked on tasks of speech alignment, ASR, VAD, long audio segmentation, automatic utterance verification, and automatic processing of client's data.
- Developed models in PyTorch, K2 / Lhotse, Kaldi and its Python APIs. Integrated pre-trained models (Whisper, SileroVAD, PyKaldi, Spacy, Wav2Vec2) into tools to accomplish described tasks.

### WorkPackage Lead in EU Horizon2020 Project : Sleep Revolution

School of Computer Sciences at Reykjavik University

Mar 2021 - Dec 2021

- Lead a team in collection and analysis of polysomnography, audio, and voice data. Designed the collection protocol, supervised the process for 50 overnight and daytime studies, and developed analysis toolkit in Python / PyTorch (<https://github.com/RanoRaraku/SleepAT>).

### ASR Team Lead in Icelandic Language Technology Project

School of Science and Engineering at Reykjavik University

Jan 2021 - Dec 2021

- Supervised the team working on improving automatic segmentation of transcribed TV conversations, ASR for children, and research into subword unit modelling for ASR.

### Research Scientist

School of Computer Sciences at Reykjavik University

Jan 2019 - Dec 2020

- Worked on automatic detection of sleep disordered breathing events and evaluation of sleep scorings. Researched correlation between snoring acoustics and objective sleep-related parameters such as sleep stages.

### Postdoctoral Researcher

School of Science and Engineering at Reykjavik University

Oct 2015 - Dec 2018

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- Worked on automatic assessment of voice pathologies, namely on improving detection of rough, breathy and strained dimensions, and helping to understand their biomechanics. The project involved cooperation with voice pathology experts from Massachusetts General Hospital–Harvard. Worked on stress detection for air-traffic controllers.

### **Contractor**

deCODE genetics

*Mar 2017 - Dec 2017*

- Co-wrote analysis software for deCode Genetics to extract speech and voice parameters, which were then correlated against genetic phenotypes on a sample of 20k+ Icelanders.

Eleveo

*Mar 2014 - Jul 2014*

- Trained and finetuned HMM-GMM models for keyword-spotting system in Czech.

## **ACHIEVEMENTS and ACTIVITIES**

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- Co-authored a Horizon2020 grant to bring a revolution to sleep medicine. The grant was issued by European Commission in March 2021 (<https://cordis.europa.eu/project/id/965417>).
- Received a grant to build an HPC for deep learning for the Language and Voice Lab at RU. The grant was issued by RANNIS in 2018. Built and co-administred the cluster.
- Reviewer for ICASSP 2022/23/24, InterSpeech 2022/23 and occassional reviewer for journals.
- Supervisor of Master's students and summer students.

## **EDUCATION**

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**Czech Technical University in Prague - Faculty of Electrical Engineering / Czechia**

*2016 - PhD in Speech Recognition*

**Czech Technical Univeristy in Prague - Faculty of Electrical Engineering / Czechia**

2011 - Master's Degree in Telecommunication Engineering

**Czech Technical Univeristy in Prague - Faculty of Electrical Engineering / Czechia**

2009 - Bachelor's Degree in Telecommunication Engineering

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