

Taras Sereda. ML Researcher



Hi, I'm a **Machine Learning researcher** with over **10 years of experience** in tech. My research focus is ML for audio, specifically TTS modelling and ASR. I'm currently a visiting scholar at UCU in Lviv, Ukraine, where I give lectures on ML for audio processing.

Contacts and useful links

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[🐙 github.com/taras-sereda](https://github.com/taras-sereda)

Experience

Visiting Scholar

Ukrainian Catholic University (*Mar 2022 - present*)

Giving lectures on speech and audio processing, focusing on building text-to-speech(TTS) and automatic speech recognition(ASR) systems using modern deep learning approaches.

ML researcher

Self-employed (*Sep 2022 - present*)

- Providing consultancy services for projects focused on developing conversational text-to-speech (TTS) systems and robust speech recognition algorithms for low-SNR environments.
- Experimenting with self-supervised modelling for audio processing, specifically I'm interested in multi-lingual embedding spaces, that are robust to various acoustic environments.
- Creating prototypes and conducting experiments to validate the feasibility and performance of new ideas in the field of speech and audio processing.

Co-founder, Director of Research

Vocalics.ai *Kyiv, Ukraine - (Feb 2019 - Sep 2022)*

I co-founded Vocalics.ai with the idea of multilingual speech synthesis in mind when a speaker's identity and unique speaking style are preserved with voice translation to world languages.

As a Director of research:

- Developed a multi-lingual speech synthesis system that preserves speaker identity and unique speaking style together with methodology for quality

evaluation of generated speech in dimensions of intelligibility, speaker and prosody similarity.

- Led and managed a team of 4 researchers in the development of cutting-edge speech synthesis technologies.
- Reimplemented, tested, and customized multiple SOTA papers from the speech synthesis field, including autoregressive and parallel TTS approaches; Flow/Diffusion based generative modelling approaches for audio.

As a Co-founder:

- Successfully recruited and managed a team of experienced professionals to build out the technical infrastructure and expand the company's capabilities.
- Conducted customer interviews and market research to validate product-market fit and inform product development.

ML Engineer

Whisper.ai San Francisco, CA, USA - (Feb 2018 - Jul 2018)

Developed advanced audio source separation models based on neural networks(PIT, Chimera network). Eventually, models were deployed on ARM devices, to improve listening experience for those with mild hearing loss to hear better in noisy environments (restaurants/public transport/public spaces)

ML Researcher

Ring Labs Kyiv, Ukraine - (Sep 2016 - Apr 2017)

First employee in Ukrainian R&D office, hired to establish ML department, was leading a research team. Working on object detection algorithms based on R-CNN, YOLO, with highly customized in-house implementations.

ML Engineer (Part time)

IPGraphy Kyiv, Ukraine - (Oct 2015 - Jun 2016)

Developed core algorithm for visual object similarity search applied for images of trade marks. IP rights NN based tool, aimed to help attorneys achieve higher productivity.

ML Engineer

DepositPhotos Kyiv, Ukraine - (Dec 2014 - Dec 2015)

Developed core algorithms for virtual stylist app.

- Recommender system, suggests how to combine clothes of your wardrobe
- Neural networks for automatic clothes classification and wardrobe categorization

Skills

- Python
- CUDA programming
- Performance tuning

- Rust
 - Java
 - Databases and SQL
 - Pytorch
 - Tensorflow
 - Algorithm and data structures
 - Project Management
 - Problem solving
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Languages

Ukrainian 🇺🇦

Native speaker

English 🇺🇸

Proficient speaker

Courses and Talks

- Course **Deep Learning for Audio** Projector 2019, UCU Summer Schoold 2020
 - **"VocalicsAI. Artificial intelligence removes language barriers"** Talk at FW days, 2021
 - **"Waveglow. Generative modeling for audio synthesis"** Talk at FW days, 2019
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Education

Masters's Degree in Mathematical Modelling

2011 - 2012

KNEU - Kyiv, Ukraine

Bachelor's Degree in Cybernetics

2007 - 2011

KNEU - Kyiv, Ukraine