Taras Sereda. ML Researcher

👋 Hi, I'm a **Machine Learning researcher** with over **10 years of experience** in tech. My focus for the past few years has been ML for audio, TTS modelling and ASR. I'm a visiting scholar at UCU (Lviv, Ukraine) where I'm giving lectures on ML for audio processing.

Contacts and useful links

✉ taras.y.sereda@proton.me

🔗 linkedin.com/in/tarassereda

👾 github.com/taras-sereda

Experience

ML researcher

Self-employed *(Sep 2022 - present)*

Providing consultancy services for cutting-edge 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.

Developing prototypes and validating ideas in the area of speech tech.

Visiting Scholar

Ukrainian Catholic University *(Mar 2022 - present)*

Giving lectures on speech and audio processing, covering topics such as building text-to-speech(TTS) and automatic speech recognition(ASR) systems.

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 Co-founder:

- Hiring top executives, as well as key engineers for ML, back-end, and front-end teams.

- One-o-one and performance valuation of the engineering team in the Kyiv office, 15 people.
- Customer Development. Interviews with early adopters of our speaker identity-preserving TTS
- Technical supervision of integration between front-end, back-end, ML teams.

As a Director of research:

- Managed ML research team of 4 people: long and short-term planning, code reviews, brain-storming new ideas, coaching and onboarding new employees, people management.
- Reimplemented, tested, and modified many SOTA papers from the speech synthesis field, including autoregressive, parallel TTSs, Flow-based, Diffusion models, GANs, VAEs.
- Developed core algorithms for identity and style-preserving speech generation. Neural Networks, VAEs, Diffusion Models, Dynamical Programming.
- Developed algorithms for quality evaluation of synthesized speech in dimensions of Intelligibility, Speaker Similarity, and others.
- Our team built from scratch and maintained multi-GPU DL rigs for in-house ML research projects.

ML Engineer

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

Developed advanced audio source separation models based on neural networks. Eventually, models were deployed on ARM devices, with the end goal of helping people 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.

- Object detection algorithms based on R-CNN, YOLO. With highly customized implementations developed in-house.
- image and video analysis

Skills: Tensorflow, Pytorch, Python, Leadership, Mentoring.

ML Engineer

SyncWords *Kyiv, Ukraine – (Dec 2015 - Sep 2016)*

Developed deep learning models for closed captioning automation and language modeling.

Skills: GPU computing, Tensorflow, Python, Java.

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.

Skills: Image classification and clustering, GPU computing, convolutional NNs

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

Software Engineer

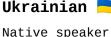**OrgaSystems** *Kyiv, Ukraine – (Mar 2013 - Dec 2014)*

worked for various mobile operator clients in Middle East and Eastern Europe.
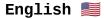
- performance tuning databases
- bug fixing in C++ application code
- providing on-site consultations
- building reporting solutions
- performance/functional testing
- billing and invoicing configuration
- data migration of millions of subscribers.

Skills: data migration, PL/SQL, Python, C++, shell scripting

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

Education

Masters's Degree in Mathematical Modelling

2011 - 2012

KNEU - Kyiv, Ukraine

Bachelor's Degree in Cybernetics

2007 - 2011

KNEU - Kyiv, Ukraine