

Taras Sereda. ML Researcher & Engineer

Machine Learning Researcher and Engineer with 10+ years of expertise in audio, vision, text processing. Developed state-of-the-art ASR, TTS, and computer vision systems. Passionate about pushing the boundaries of human knowledge.

Contacts and links

 taras.y.sereda@proton.me
 <https://taras-sereda.github.io>
 linkedin.com/in/tarassereda
 github.com/taras-sereda

Publications:

- Pheme: Efficient and Conversational Speech Generation
Budzianowski Paweł, Sereda Taras, Cichy Tomasz, and Vulić Ivan
- Transcribe, Align and Segment: Creating speech datasets for low-resource languages
Sereda Taras

Technical skills:

- Programming: Python, Rust, CUDA C, Java
- ML/DL Frameworks: PyTorch, NVIDIA NeMo, Hugging Face, TensorFlow
- ML Techniques: self-supervised learning, CNNs, RNNs, Transformers, GANs
- Data processing & visualisation: numpy, scikit-learn, matplotlib, seaborn, plotly
- MLOps: Docker, Kubernetes, CI/CD, MLflow, Weights & Biases
- Databases: PostgreSQL, MongoDB
- Cloud computing: Amazon AWS, Google GCP

Leadership skills:

resilience, strategic thinking, vision

Professional Experience

ML Consultant

Self-employed (Sep 2022 - present)

- Developed a real-time ASR system for low SNR environments (-10 to 0 dB), outperforming open-source SOTA models on domain-specific data
- Collaborated with PolyAI to create a zero-shot TTS system for call center automation, achieving faster-than-real-time performance on A100 GPUs

Visiting Scholar

Ukrainian Catholic University (Mar 2022 - present)

- Deliver lectures on speech and audio processing, focusing on TTS, ASR, and source separation(SS)
- Mentor and advise students on academic challenges in ML and audio processing
- Developed course material: github.com/taras-sereda/deep-learning-for-audio

Co-founder, Director of Research

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

- Led R&D for a novel multi-lingual speech synthesis system preserving speaker identity and style
- Managed a team of 4 researchers, driving innovation in SOTA speech synthesis technologies
- Implemented and customized multiple SOTA papers in speech synthesis, including autoregressive and parallel TTS approaches
- Developed methodology for quality evaluation of generated speech in dimensions of intelligibility, speaker and prosody similarity
- Conducted customer interviews and market research to validate product-market fit

ML Engineer

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

- Developed advanced audio source separation models (PIT, Chimera network) deployed on ARM devices
- Improved listening experience for those with mild hearing loss in noisy environments

ML Researcher

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

- Established and led the ML department as the first employee in the Ukrainian R&D office
- Developed object detection algorithms based on R-CNN and YOLO with customized in-house implementations

ML Engineer (Part time)

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

- Developed core algorithm for visual object similarity search applied to trademark images
- Created an IP rights NN-based tool to enhance attorney productivity

ML Engineer

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

Developed core algorithms for a virtual stylist app, including:

- Recommender system for clothing combination suggestions
- Neural networks for automatic clothes classification and wardrobe categorization

Languages

Ukrainian 🇺🇦

Native speaker

English 🇺🇸

Proficient speaker

Talks

- "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