



We adopt and develop **state-of-the-art TTS** and **ASR models** for Seznam's internal applications, delivering the highest possible audio quality in Czech and beyond.

Automatic Speech Recognition

- Extensive **in-house** and open-source datasets.
- Training and fine-tuning of *Wav2Vec*, *Whisper*, *Parakeet*, and other SOTA systems.
- Balancing fast, real-time models with high-quality offline ASR.
- **Just WER alone is not enough** — we explore perceptual and semantic evaluation metrics.

ASR

Usecases

- **Seznam Assistant** powered by the LLM SeLLMa model
- Article reading and audio publishing
- Radio moderation and content generation
- Internal meeting transcription and summarization

"Potřebuji nějaký tyčový vysavač do sedmi tisíc. Jaké jsou moje možnosti?"

Multimodal LLMs

- There are limitations to the traditional staged pipelines.
 - e.g., response latency, loss of nuance in ASR transcription
- We are exploring **unified multimodal approaches that directly connect text, speech, and other modalities.**

Assistant

"Co třeba Xiaomi G20 Lite za 2520Kč?"

Text processing

- Preprocessing and normalization of **numbers**, **foreign words**, **abbreviations** and other nuances.
- Handled by LLMs trained in-house with curated annotations.

Text preprocessing

Text to speech

- The aim is to generate **fluent**, **expressive**, and **natural intonation** for all speaking styles.
- Strong **in-house** and public datasets
- Two-stage single-speaker systems (FastPitch + HiFi-GAN) / single-stage single speaker models (VITS)
- Long-form generation: Producing **hour-long speech** while maintaining consistent style and quality.
- Both human & automatic evaluation:
 - Human annotators provide subjective scores such as CMOS
 - Automatic metrics such as *UTMOS*, *NISQA*, or *ASR-based losses* enable larger coverage.
- We explore large audio LLMs — training models on 10k+ hours to enable **zero-shot TTS**, **more natural dialogue generation**, and improve **voice expressiveness**.

TTS

"Co třeba Šaomi Gé dvacet lajt za dva tisíce pět set dvacet korun?"



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