FACULTY
OF INFORMATION
TECHNOLOGY
CTU IN PRAGUE

Assignment of bachelor's thesis

Title:	Computational Auditory Scene Analysis (CASA) for Separating Monophonic Music
Student:	Nikita Mortuzaiev
Supervisor:	Ing. Mgr. Ladislava Smítková Janků, Ph.D.
Study program:	Informatics
Branch / specialization:	Knowledge Engineering
Department:	Department of Applied Mathematics
Validity:	until the end of summer semester 2022/2023

Instructions

1. Study and describe the basics of sound recognition and auditory scene analysis in humans.
2. Study and describe the existing algorithms for computational auditory scene analysis and their applications for sound recognition and separation.
3. Prepare a dataset that consists of recorded monophonic piano sounds.
4. Using the prepared dataset, try to apply CASA algorithms to separate tones from the background.
5. Evaluate the proposed CASA system in connection with a simple classifier. Evaluate the performance in comparison to non-CASA classification.
6. Perform experiments and evaluate them.

Electronically approved by Ing. Karel Klouda, Ph.D. on 1 February 2022 in Prague.