

Bernard Spiegl

Helsinki, Finland

EDUCATION

Master of Science - Signal Processing and Data Science (GPA 4.7 / 5.0)

2021 — 2023

Aalto University

Helsinki, Finland

- minors: Human Neuroscience and Technology; Acoustics and Audio Technology
- focus areas: Deep Learning, Neuroscience, Audio Signal Processing

Bachelor of Science - Computer Science (GPA 3.8 / 5.0)

2018 — 2021

Faculty of Electrical Engineering and Computing, University of Zagreb

Zagreb, Croatia

- BSc thesis: Contrastive Unpaired Translation using Focal Loss for Patch Classification
arXiv preprint - [\[PDF\]](#)
- BSc project: Semi-Supervised Image Classification
- focus areas: Deep Learning, Computer Vision

ACHIEVEMENTS

Dean's Incentive Scholarship	Received a scholarship awarded by Aalto University for good academic progress.	2022
Google Foobar	Received an invitation to Google's Foobar secret coding challenge.	2022
UNODC Youth Forum	Participated as a representative of Croatia at an international youth forum in Vienna, Austria organised by the United Nations Office on Drugs and Crime.	2018
STEM Scholarship	Received a scholarship for being among the top students on matriculation exam in fields of Mathematics and Physics.	2018

EXPERIENCE

RESEARCH ASSISTANT

APR 2022 — JUN 2022

Aalto University

Helsinki, Finland

- Implemented a deep neural network architecture that combines VQ-VAE to compress the audio and an autoregressive transformer that operates on latent representations, generating a latent response, in an endeavor to simulate musical call and response interaction.
- Part of a research project on usage of AI in music and creative processes coordinated by Koray Tahiroğlu in collaboration with Google Brain (Magenta Team).

DATA SCIENTIST INTERN

JUL 2021 — AUG 2021

RealNetworks Inc.

Zagreb, Croatia

- Researched and tested multiple deep learning architectures for speech classification (robocall detection) and recognition using transformers (ViT) and various CNNs.

SOFTWARE ENGINEERING INTERN

JUL 2019; JUL 2020 — AUG 2020

Koncar – Power Plant and Electric Traction Engineering Inc.

Zagreb, Croatia

- Developed a GUI client for network communication via Modbus protocol.
- Developed a web application for real time tracking and management of data on a SCADA based wind turbine systems.

UNDERGRADUATE TEACHING ASSISTANT

FEB 2019 — JUL 2019

Faculty of Electrical Engineering and Computing, University of Zagreb

Zagreb, Croatia

- Assisted students during laboratory examinations in Fundamentals of Electrical Engineering course.

OTHER SKILLS AND INTERESTS

Languages	Croatian (native), English (fluent - C2 (TOEFL iBT 114/120)), German (limited), Finnish (elementary), Italian (elementary)
Interests	Deep Learning, Neuroscience, Music Production and Sound Design, Guitar and Piano Playing, Sailing