

Experienced Audio Programmer and Researcher

Education

Friedrich-Alexander-Universität Erlangen-Nürnberg, Elite Master's Study Program Advanced Signal Processing and Communications Engineering

- *Pending Completion*, Expected graduation: October 2021
- GPA: 1.0 (best grade: 1.0)
- Master thesis in cooperation with Aalto University in Finland
- One of the 12 candidates accepted to the program from a pool of 500 applicants

AGH University of Science and Technology, Bachelor of Engineering in Computer Science

- *Pending Completion* (4 out of 7 semesters completed)
- GPA: 4.67 (best grade: 5.0), result in the top 10% of the students

AGH University of Science and Technology, Bachelor of Engineering in Acoustic Engineering

- Graduation date: January 2019
- Diploma with distinction, award in the Contest for the Best Diploma Thesis of the Faculty
- GPA: 5.0 (best grade: 5.0)

Experience

Student teaching assistant, Friedrich-Alexander Universität Erlangen-Nürnberg

October 2020-February 2021

- Corrected lab Jupyter Notebooks in Python and assisted in five 4-hour online lab sessions from Statistical Signal Processing, answering possible questions, debugging students' code, and improving students' understanding of the field

Student researcher, 'Audio Processing using Distributed Acoustic Sensors' grant project at the AGH University of Science and Technology

March 2019-July 2019

- Developed a new multichannel audio source separation algorithm using nonnegative tensor factorization through researching over 40 publications on topics including machine learning, multichannel signal processing and statistical signal processing and collaborating with 4 scientists from Finland, France, and Poland

Junior Software Developer, Techmo sp. z o.o.

September 2017-October 2018

- Participated in the development of a realistic audio spatialization engine for enhanced computer games and Virtual Reality experience using C++, C#, and Python
- Mentored 2 interns, enabling their smooth integration with the team
- Enhanced product's competitive advantage by implementing a unique feature of slow-motion or 'chipmunk' audio effect with the variable speed replay algorithm

Software Intern, Techmo sp. z o. o.

February 2017-August 2017

- Collaborated with a major game-developing company by designing and implementing a SoundToolkit audio engine demo in Unity

Technical Skills

- Advanced: C++, C, Python, Matlab, Git, Google Test Framework, Unity, LabVIEW
- Proficient: JUCE framework, PyTorch, NumPy, SciPy, bash, UNIX/Linux, Java, C#, Reaper DAW, MS SQL, Visual Studio, Visual Studio Code, GIMP, DaVinci Resolve
- Basic: assembly language, HTML, CSS, JavaScript, Bootstrap, FFmpeg, EASE Simulator, CATT-Acoustic, Windows Presentation Foundation

Research projects

- Master thesis: Virtual Analog modeling via neural ordinary differential equations
- Minor research project: Perceptual simulation of loudspeaker limitations
- Major research project: Physically-based sound synthesis for VR/AR applications using Functional Transformation Method
- ASC Summer School project: Enhancement of modal behavior of Feedback Delay Network reverberators at low frequencies
- Bachelor Thesis: a multithreaded hybrid sound synthesizer with waveshaping and elements of virtual analog modeling
- Educational FM synthesizer, a desktop app helping users understand the principle of the frequency modulation technique in sound synthesis

Honors & awards

- Admission to the DAAD “Internationale Forschungsaufenthalte für Informatikerinnen & Informatiker (IFI)” program for the master thesis research in Finland from May to October 2021
- Admission to the statewide Max Weber-Programm Bayern for talented students including a scholarship and a mentoring program in April 2020
- Recipient of the Best Diploma Thesis of the Faculty Award in January 2019 (12 recipients out of over 700 graduates of the faculty)
- Received 1st prize out of 15 submissions at the 59th Conference of Student Scientific Circles of the Mining Division of the AGH UST in Acoustic Engineering section in December 2018
- Rector's Scholarship for the best students in 2015/2016, 2016/2017, 2017/2018 and 2018/2019 academic years

Extracurriculars & interests

- **Spoken languages:** Polish (native speaker), English (fluent, C1-certified), German (fluent, C1-certified), Spanish (very good command, A2-certified), Russian (basic communication skills)
- **Blogging and making YouTube videos** about software sound synthesis, sound effects programming and audio programming: so far 16 articles written and 22 videos published with 240 subscribers and over 6,400 views on YouTube (<https://thewolfound.com>)
- **Electronic film music composition:** debut album consisting of 12 self-composed, self-arranged and self-performed pieces was published on December 14, 2020 (official music website: <https://thewolfofficial.com/>)
- **Volunteer** for three months for the World Youth Day 2016 in Kraków; guided international pilgrims around the city center sharing the city's history in English, German, and Polish
- **Tomb Raider custom level design:** 3 standalone games released, the top one scoring 9.25/10 on average in players' reviews (works at trle.net: <http://trle.net/sc/authorfeatures.php?aid=807>)