

Panagiotis Zachos

Cheilonos Patreos 7 Patras, 26224

+306948226940 | panzaxos@gmail.com | <https://github.com/Panagiotis-Zachos> | <https://www.linkedin.com/in/panagiotis-zachos/>

Education

University of Patras

Patras, GR

PhD in Audio Engineering

Oct 2020 - Current

- Subject: Sound Perception Optimization for Headphone Listening
- Summary: Development and optimization of algorithms that utilize auditory mechanisms and advanced digital processing methods aiming to achieve improved quality and naturalness in the perception of the perceived sound.

University of Patras

Patras, GR

Electrical and Computer Engineering

Sep 2014 - Aug 2020

- Thesis: Sound Source Localization Using Deep Neural Networks Utilizing Binaural Cues
- Grade Point Average: **7.45 / 10**

4th General High School

Larisa, GR

High School

Sep 2011 - Jun 2014

- Passed with Distinction
- Grade Point Average: **18.8 / 20**

Work Experience

Sonova Group

Zurich, Switzerland

Internship in Research & Development for Hearing Performance

Nov 2020 - Apr 2021

- Developed a time domain signal processing feature in a new architecture paradigm from exploration to implementation
- Performed acoustic measurements
- Developed tools for fast integration and verification
- Contributed to the parametrization of existing signal processing functionalities
- Performed hearing performance exploration and validation

University of Patras

Patras, Greece

Machine Learning Researcher for Audio-Visual Signal Processing

Sep 2020 - May 2023

- Development of a subsystem that generates static and dynamic 3D augmented reality objects with interactive interfaces to be used in AR enhanced theatrical plays.
- Developed an interactive theater play director application

University Projects

YouTube Album Downloader

[Github link](#)

Personal

Nov 2019

- Command line application in Python to easily download full albums from YouTube and automatically split them in their respective songs by parsing the video description for song timestamps
- **Technical Skills**: Python, Shell, APIs.

Adaptive Filtering for Headphone Active Noise Control (ANC)

[Github link](#)

University of Patras

Jun 2019

- Design of 2 ANC applications utilizing adaptive filters, one with knowledge of environmental noise, via a microphone placed outside the headphone enclosure and one without information about the noise.
- **Technical Skills**: Signal Processing, MATLAB

Blood Pressure Monitoring System

[Github link](#)

University of Patras

Jun 2018

- An application written in Java consisting of two parts, a Blood Pressure Monitoring device (Raspberry Pi) with the role of the client, and a multi-threaded Server simulating a doctor's computer. The client automatically submits a patients' measurements to the server from where the doctor can remotely monitor their health.
- **Technical Skills**: Java, Raspberry Pi, Networking, Parallel/Threaded Programming.

Intelligent Control of a ZEB with FCMs

Patras, Greece

University of Patras

Jun 2018

- Design and modeling of a Zero Energy Building's power usage and production systems.
- Fuzzy Control Maps were employed to calculate the optimal energy balance to minimize carbon footprint.
- **Technical Skills**: MATLAB, Fuzzy Control Maps.

Control System and PIDF Design

Patras, Greece

University of Patras

Feb 2017

- Implementation of a transfer function (Plant) and a PIDF controller using LM741 Op-Amps.
- Performed simulations of the electrical circuits with PSpice and MATLAB Simulink to select the necessary components, laboratory measurements on the constructed circuit, and PCB designs via EAGLE Pcb for the Plant and PIDF Controller.
- **Technical Skills:** PIDF design, PCB design, Circuit simulations.

2048 Game Solver

Github link

University of Patras

May 2015

- IA program written in C that automatically plays the popular mobile game “2048”, deciding the best possible move through statistical analysis.
- **Technical Skills:** C, Statistical Analysis, Shell Game Development.

Skills

Programming Python, MATLAB, C, Java, TI C6713 Assembly, SQL.

Miscellaneous Windows, Linux, 网络, Microsoft Office, Git.

Audio Acoustic Measurements (Headphones, Room Responses), Room Equalization Wizard, Audacity, Phonak Target

Honors & Awards

2018	2nd Place - EESTEC Challenge , EESTEC Challenge is an annual competition for engineering students with varying subjects. This competition involved processing Big Data and constructing Machine Learning models for planetary data.	Greece
2013	Euroscola Program , Accepted into the Euroscola program by winning the local round which involved writing an essay about the democratic deficit of the EU. During the program I was responsible for presenting a new ecological plan, devised by our team consisting of members from 5 different EU countries, in the European Parliament.	France
2006	1st Place - 4th Panhellenic Orchestra Competition , I was a member of the classical guitar ensemble from the ‘Gkouletsou’ conservatory, winning first place in the competition that took place in Piraeus University in Athens.	Greece

Publications

JOURNAL ARTICLES

Feedforward Headphone Active Noise Control Utilizing Auditory Masking
Panagiotis Zachos, Gavriil Kamaris, John Mourjopoulos
(2023). 2023

Low Filter Order Digital Equalization for Mobile Device Earphones
Gavriil Kamaris, Panagiotis Zachos, John Mourjopoulos
journal of the audio engineering society 69.5 (May 2021) pp. 297–308. 2021

CONFERENCE PROCEEDINGS

Targeted Beamforming ANC Based on Disturbance Metrics
Panagiotis Zachos, John Mourjopoulos
Forum Acusticum, 2023, Turin, Italy

Beamforming Headphone ANC for Targeted Noise Attenuation
Panagiotis Zachos, John and Mourjopoulos
Journal of the Audio Engineering Society, 2023, Helsinki, Finland

Evaluation of Multichannel Reproduction of 3D audio in a Cave Automatic Virtual Environment
P Chatziantoniou, G Kamaris, K Kaleris, G Moiragias, P Zachos, S Agorgianitis, J Mourjopoulos
ACOUSTICS 2022, 2022, Thessaloniki, Greece

Binaural Data Reduction for Robust Sound Source Localization utilizing Convolutional Neural Networks for Reverberant Environments
Panagiotis Zachos, Gavriil Kamaris, John Mourjopoulos
ACOUSTICS 2022, 2022, Thessaloniki, Greece

Large Scale Headphone Response Analysis and Evaluation
Panagiotis Zachos, Dimitris Mermigas, John Mourjopoulos
ACOUSTICS 2022, 2022, Thessaloniki, Greece

An Efficient Data Reduction Method for Binaural Parameter Utilization
Panagiotis Zachos, Gavriil Kamaris, John Mourjopoulos
Forum Acusticum, 2020, Lyon, France

Languages

English	C2 - Advanced proficiency
Spanish	B2 - Professional proficiency
German	A2 - Basic proficiency
Greek	Native proficiency