Filip Franek

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Profile

- **DSP software engineer** focused on audio and acoustic processing.
- Background in analog/digital electronics, adaptive signal processing and machine learning.
- 3+ years of professional multicultural experience.

Technical Skills

- Matlab, Octave (5 years)
- NI LabVIEW (3 years)
- C, C++ (1 years)
- Python (3 months)
- HTML5, CSS3 (3 months)
- Windows XP,7,8,10, Ubuntu
- Linux Shell (3 months)
- Github, Git (3 months)
- Machine Learning (6 months)
- 8 bit AVR microcontrollers (6 months)
- Planar and Spherical Beamforming
- Adaptive signal processing
- Acoustic event detection
- 3D sound reconstruction
- LaTeX (1 year)

Work Experience

11/16 – 11/17 **Audio DSP Software Engineer,** Freelance, Remote

Individual approach to solving diverse audio and acoustic problems while coding DSP methods.

- Development of adaptive algorithms to tackle noise cancelation and sound source extraction problems.
- Continuous work on beamforming led to implementing planar and spherical beamforming models with delay-and-sum or adaptive localisation algorithms.
- Sound source identification over machine learning supported by Courser course.

11/14 – 11/16 **Acoustic Engineer,** SM Instruments Inc., South Korea

Research and development of sound and vibration localization system with a built software ready to be used by a customer. Some methods subjected to a patent process.

- Publication - Localization of transient events in dispersive medium at SAE, Grand Rapids, USA
- Projects - Vibration Tracker: Searching improved methods for detecting vibration and developing real-time algorithm.
  - Acoustic Stethoscope: Implementing 3D sound localization system from scratch

Education

09/17 – 03/18 **Machine Learning,** Stanford University, Coursera Online 96.1%

09/12 – 08/14 **M.Sc.Eng. Engineering Acoustics,** Technical University of Denmark GPA 2.9

09/13 – 06/14 **M.Sc. Engineering Acoustics,** Korea Advanced Institute of Science and Technology, GPA 3.0

- Dual Degree Master Program at Electrical Department at DTU and Mechanical Department at KAIST. Communication by questioning and listening to group-fellows evoked crucial sense for team work.
- Master's Project - Localization of Incoherent Sound Sources by 3D Intensity Array
- Publication - Paper at Internoise2015 based on the Master's Project, San Francisco, USA

09/09 – 06/10 **B.Eng. Sound & Broadcast Engineering,**Glyndŵr University, United Kingdom, GPA 3.0

- Bachelor project focused on development of an analog mixing desk led me to achieve thorough understanding of every element of the sound mixing chain by building and analysing each module.

09/07 – 08/11 **Bc. Electronics and Telecommunication,** University of West Bohemia, Czech Republic, GPA 2.7

- Software programming and electronic circuitry development became essential building blogs in analysing and solving analogue and digital electronic problems.

Language Skills

	basic → native					
Czech						■
English					■	
Spanish			■			
Korean		■				
	A1	A2	B1	B2	C1	C2

Interests

Adventure travelling to exotic places, carrying out sports as climbing, kitesurfing and diving ended up as my current passion. This resulted in the fulfilment of advanced certificates in scuba diving and freediving.