AI+ Audio Practitioner™(AAUDIO)

ID AAUDIO **Price** CHF 995.—(excl. VAT) **Duration** 1 days

Who should attend

- Aspiring Audio Engineers – Ideal for those looking to integrate AI into sound design, mixing, and mastering.
- Music Producers and Composers – Perfect for creators who want to use AI tools for music generation and adaptive composition.
- Machine Learning Enthusiasts – Great for learners eager to apply ML models to audio analysis and synthesis.
- Game and Media Developers – Suitable for professionals aiming to create intelligent, immersive, and responsive sound environments.
- Tech Innovators and Researchers – Designed for individuals exploring cutting-edge AI applications in audio technology and digital sound innovation.

Prerequisites

Requires basic programming knowledge in Python, familiarity with audio signal processing and machine learning concepts, comfort with linear algebra and probability, and hands-on experience using DAWs or audio software. A creative and experimental mindset is essential.

Course Objectives

- Revolutionizes Sound Creation Learn how AI automates composition, mixing, and mastering, making audio production faster and more innovative.
- Enhances Audio Quality Use AI tools to clean, balance, and optimize sound for professional-grade results across platforms.
- Personalizes Listening Experiences Discover how AI tailors music and soundscapes to individual preferences in real time.
- Bridges Creativity and Technology Combine artistic vision with AI-driven tools to create immersive, next-generation audio experiences.
- Expands Career Opportunities Gain industry-ready skills for roles in music tech, sound design, gaming, and multimedia production.

Course Content

Module 1: Introduction to AI and Sound

- 1.1 What is AI?
- 1.2 AI in Daily Life: Audio Examples
- 1.3 Basics of Sound Waves, Amplitude, Frequency
- 1.4 Digital Audio Fundamentals

Module 2: Harnessing AI Across Audio Domains

- 2.1 AI for Audio Enhancement and Restoration
- 2.2 AI for Audio Accessibility and Personalization
- 2.3 AI in Speech and Voice Technologies
- 2.4 Popular Audio Libraries: Librosa, PyAudio
- 2.5 Use Case:AI-Driven Real-Time Captioning and Translation for Live Events
- 2.6 Case Study:Personalized Hearing Aid Adaptation Using AI and Smart Earbuds
- 2.7 Hands-on: Voice Emotion Detection using Deepgram’s Voice AI Platform

Module 3: Machine Learning & AI for Audio

- 3.1 Machine Learning Models for Audio Applications
- 3.2 Deep Learning & Advanced AI Techniques for Audio
- 3.3 Audio-Specific Architectures: CNNs, RNNs, Transformers
- 3.4 Transfer Learning in Audio AI
- 3.5 Use Case: Speech-to-Text Transcription for Medical Records
- 3.6 Case Study: AI-powered Music Generation with Deep Learning
- 3.7 Hands-on: Build a Speech-to-Text Model Using TensorFlow

Module 4: Speech Recognition & Text-to-Speech

- 4.1 Fundamentals of Speech Recognition & Phonetics
- 4.2 API-based ASR Solutions
- 4.3 Building Custom ASR Models with Transformers
- 4.4 Introduction to TTS & Voice Cloning
- 4.5 Use Case: Automating Meeting Transcriptions with Google Speech-to-Text API
- 4.6 Case Study: Custom Transformer-based ASR Model for Multilingual Customer Support
- 4.7 Hands-on: Transcribe audio with an ASR API; generate speech from text

Module 5: Audio Enhancement & Noise Reduction

- 5.1 Common Audio Issues
- 5.2 AI-based Noise Filtering & Enhancement
- 5.3 Use Cases: Enhancing Audio Quality for Remote Work Calls Using AI Noise Reduction
- 5.4 Case Study: Krisp's AI-powered Noise Cancellation in Podcast Production
- 5.5 Hands-on: Use Krisp or Adobe Enhance Speech to clean noisy audio

Module 6: Emotion & Sentiment Detection from Audio

- 6.1 Introduction to Emotion Detection
- 6.2 AI Models for Emotion Detection: RNNs, LSTMs, CNNs
- 6.3 Challenges: Bias, Multilingual Contexts, Reliability
- 6.4 Use Case: Enhancing Customer Service with Emotion Detection from Speech
- 6.5 Case Study: IBM Watson Tone Analyzer for Real-Time Emotion Recognition
- 6.6 Hands-on: Use IBM Watson Tone Analyzer or similar APIs to analyze speech samples

Module 7: Ethical and Privacy Considerations

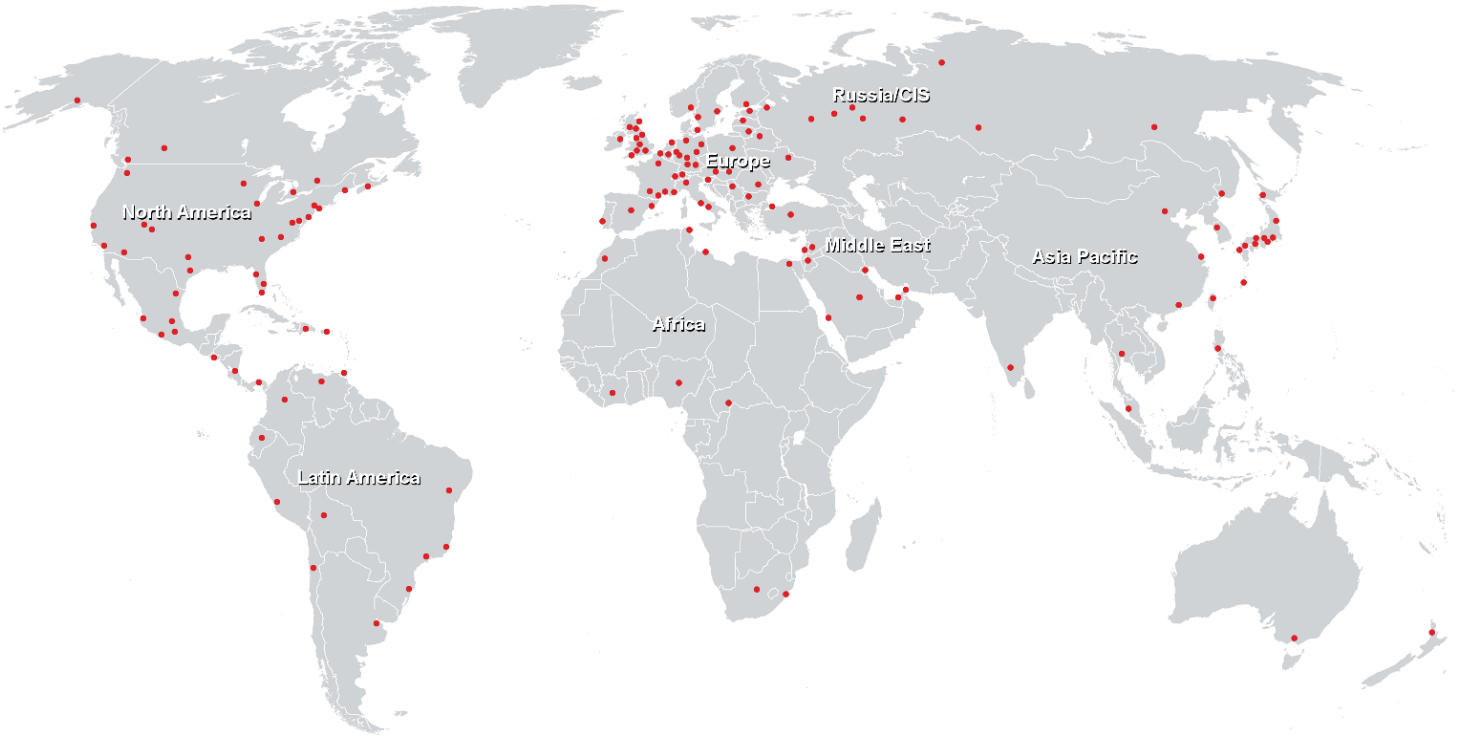
- 7.1 Deepfakes and Voice Cloning Risks
- 7.2 Privacy and Data Security
- 7.3 Bias and Fairness in Audio AI
- 7.4 Use Case: Implementing Ethical Voice Data Collection and Consent Management
- 7.5 Case Study: Addressing Bias and Privacy in Audio AI under GDPR Compliance
- 7.6 Hands-on: Detect fake audio clips; create an ethical AI checklist

Module 8: Advanced Applications & Future Trends

- 8.1 Sound Event Detection & Classification
- 8.2 Audio Search and Indexing
- 8.3 Innovations: Multimodal AI, Edge Computing, 3D Audio
- 8.4 Emerging Careers in Audio AI

AI+ Audio Practitioner™(AAUDIO)

Training Centres worldwide





Fast Lane Institute for Knowledge Transfer (Switzerland) AG

Husacherstrasse 3
CH-8304 Wallisellen
Tel. +41 44 832 50 80

info@flane.ch, https://www.flane.ch