AI+ Audio Practitioner™(AAUDIO)

ID AAUDIO **Prix** CHF 995,– (Hors Taxe) **Durée** 1 jours

A qui s'adresse cette formation

- 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.

Pré-requis

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.

Objectifs

- 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.

Contenu

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

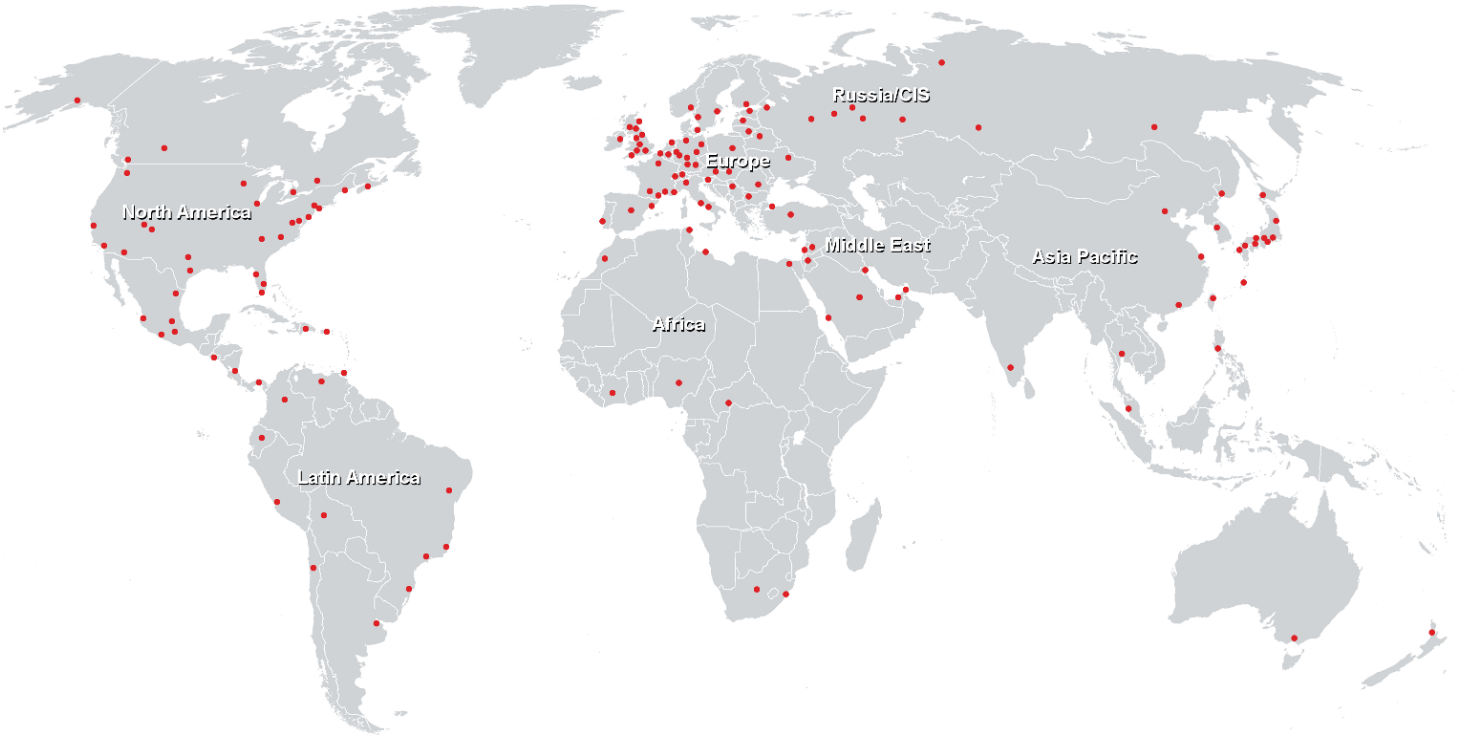
- 7.1 Deepfakes and Voice Cloning Risks
- 7.2 Privacy and Data Security
- 7.3 Bias and Fairness in Audio AI
- 7.4 Use Case: Implementing Ethical Voice Data Collection and Consent Management
- 7.5 Case Study: Addressing Bias and Privacy in Audio AI under GDPR Compliance
- 7.6 Hands-on: Detect fake audio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

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Centres de formation dans le monde entier





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