

Florent Donat-Bouillud

Junior AI Engineer | Data & AI
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PROFILE

Artificial Intelligence Engineer with a Master's degree in Intelligent Systems Engineering from Sorbonne Université. R&D experience in Machine Learning, computer vision, natural language processing, and signal processing. Experienced in developing end-to-end AI solutions and highly curious about emerging technologies, particularly agent-based approaches. Interested in designing solutions tailored to business needs, collaborating within teams, and continuously learning.

SKILLS

Programming Languages: Python, SQL, C++, C
Data Engineering: data pipelines, data ingestion, NLP preprocessing, relational databases
Generative AI: LLMs, RAG, LangChain, Chroma, Hugging Face embeddings, retrieval evaluation
Machine Learning: PyTorch, TensorFlow, scikit-learn, Transformers, ONNX, OpenCV
Development & Quality: FastAPI, REST APIs, Git/GitHub, Docker, Linux, pytest, documentation
Agentic AI: exploration of agentic approaches, llama.cpp, OpenCode, OpenRouter, and language models
Audio & Signal Processing: Librosa, ffmpeg, JUCE, MIDI

PROFESSIONAL EXPERIENCE

R&D Intern (6 months) – Generative AI and Musical Improvisation 2025
SCRIME, Bordeaux, France

- Designed and developed an end-to-end AI-assisted musical improvisation software, now used in educational and inclusive settings.
- Developed LSTM and Transformer generative models to enable real-time musical improvisation.
- Optimized models and pipelines to meet the latency and runtime stability requirements of an interactive application.

R&D Intern (6 months) – Computer Vision 2024
Alten, Sèvres, France

- Developed a pedestrian intention detection solution in urban environments to anticipate pedestrian crossings.
- Refined datasets and developed CNN and Transformer models (PyTorch, TensorFlow, OpenCV) to meet project objectives.

NLP / Data Processing Intern (4 months) 2023
France Télévisions, Paris, France

- Contributed to an audiovisual accessibility project (audio description and real-time translation) through data preparation and model training.
- Developed data ingestion and NLP preprocessing pipelines.

PROJECTS

- **RAG System – Knowledge Retrieval**
  Developed a local RAG system using LangChain, Chroma, Hugging Face embeddings, and a local LLM. Implemented document ingestion, semantic search, and retrieval performance evaluation using Precision, Recall, MRR, and Hit Rate.
- **VocalTwin – Speech Analysis Application**
  Developed a FastAPI web application to estimate and visualize articulatory movements from audio recordings. Implemented automated testing (pytest), documentation, and analysis management.
- **Audio Deepfake Detection**
  Fine-tuned and deployed a HuBERT Transformer model to distinguish authentic speech from synthetic speech.

EDUCATION

Master's Degree in Intelligent Systems Engineering – Sorbonne Université, Paris 2023–2025
Artificial Intelligence, Machine Learning for audio and vision, deep learning, reinforcement learning, NLP
Master's Degree in Robotics, Linear Control and AI – Sorbonne Université, Paris 2022–2023
Bachelor's Degree in Electronics, Electrical Energy and Automation – Sorbonne Université, Paris 2019–2022

LANGUAGES

French: Native **English:** C1 **German:** B1