



David Cleres

Hard Skills

- **Programming Languages:** Python, C++, Java, Swift, JavaScript (Node.js), R
- **Data Science & ML Stack:** NumPy, scikit-learn, OpenCV, Pandas, seaborn, Librosa, Biopython, Pydantic, DVC, Cookiecutter
- **Deep Learning Frameworks:** TensorFlow, PyTorch
- **LLM & GenAI Stack:** LangChain, DeepEval, Ollama, Anthropic API, Azure OpenAI, Weave, LangGraph
- **Data Engineering**
 - Concepts: ETL/ELT processes, data warehousing, data modeling
 - Tools: Apache Spark, Hadoop, Airflow
- **Databases:** MySQL, PostgreSQL, MSSQL, DynamoDB
- **Cloud Engineering:** Terraform
- **Cloud Platforms**
 - Azure: Azure ML Studio, Azure IoT, Azure Data Factory, EntraID, API Manager, Virtual Machines, AI Search, Document Intelligence, AI Foundry
 - AWS: S3, EC2, ECS, ECR, IoT Core, SageMaker, RDS, DynamoDB, App Services, Mechanical Turk, Device Farm
 - GCP: General services usage
- **MLOps Tools:** Giskard, MLflow, Weights & Biases (wandb)
- **Cloud Security:** Azure Security Center, IAM roles and policies, Network Security Groups, encryption best practices
- **Software Engineering**
 - Concepts: Object-Oriented Programming (OOP), design patterns, unit testing, code reviews, Agile methodologies (Scrum, Kanban)
 - Practices: SDLC, clean code principles, version control with Git
- **CI/CD:** GitLab CI/CD, GitLab Runners, Jenkins, Azure DevOps, GitHub Actions.
- **Web Development:** HTML, CSS, and full-stack development using Node.js.
- **Mobile Development:** On-device AI model deployment for inference on Android and iOS, Microphone, Foreground services, Apple Store Connect, Google Play Console

Education

Ph.D. Candidate and Doctoral Researcher (06.2020 – 11.2022)

Development of mobile passive sensing applications to support patients in managing their chronic conditions (COPD, Asthma, and Heart Failure). The developed techniques are tested in pilot and RCT studies in the field.

ETH zürich

Visiting Scholar - Healy Laboratory (02.2019 – 09.2019)

Automatic non-intrusive force measurement for heart-on-a-chip devices based on Computer Vision in Python

Berkeley
UNIVERSITY OF CALIFORNIA

M.Sc. in Computational Science & Engineering (2017 – 2019)

Interdisciplinary program providing a combination of skills in high-performance computing, numerical mathematics, multi-scale and multi-physics modeling.

EPFL

B.Sc. in Bioengineering (2014 – 2017)

The training strongly emphasizes mathematics, physics, and computer science. The curriculum provides skills in engineering, research, and biosciences.

EPFL

Experience

Visium SA - Senior Machine Learning Engineer (since 05.2024)

- **Projects:** Government, Pharma, Healthcare, and Nutrition projects with a focus on LLMops, MLOps, Technical PoCs, and Software Development.
- **LLM & GenAI:** Implemented hyper-personalization of medical content using LLMs, leveraging OpenAI's GPT models via Azure OpenAI Service. Tech Stack: LangChain, LangGraph, LangFuse, Weave, and DeepEval for LLMops.
- **Cloud Expertise:** Deployed cloud-native AI solutions on Azure, explicitly using Azure ML Studio and Azure Online Endpoints. Integrated OpenAI services within the Azure ecosystem.
- **Data Engineering:** Designed and managed data pipelines using Azure Data Factory and Azure Synapse Analytics. Applied ETL processes, data warehousing, and data modeling concepts.
- **Cloud Security:** Deployment GenAI API Gateways on Azure, adhering to cloud security best practices and compliance standards in a system-relevant bank in Switzerland.

Resmonics AG – ETH Spin-off - Co-Founder & CTO (01.2022 – 05.2024)

- **AI Training & MLOps:** Led AI training and development using Azure ML Studio, implementing MLOps practices for continuous integration and deployment.
- **Edge AI Development:** Developed Acoustic and Ambient Sensing Edge AI models for environmental and acoustic data analysis deployment on cell phones, tablets, and Raspberry Pi.
- **Software Engineering:** Created a CE Certified (MDD Class I) SaMD in the form of SDKs for Kotlin, Java, and Swift. Development of an IoT Platform using Azure IoT as the backend.
- **Cloud Security:** Implemented secure cloud solutions, focusing on data protection and regulatory compliance within healthcare settings.

Eyeware Tech SA – Data Engineer (09.2019 – 06.2020)

- Developed **Machine and Deep Learning models**, focusing on data augmentation (3D reconstructions & rotations of faces) and collection using an iOS gaze-tracking app.
- Collaborated closely with software engineering teams to integrate models into production systems.

Social Engagement & Achievements

Co-founder & President of the board – GirlsCodeToo (since 08.2021)

Empowering girls and young women (age 8-18) to discover their passion for MINT-related topics. GCT is teaching 110 tech workshops/year to +1500 girls in French, German, and Italian. Annual Budget: 100k CHF.

Vice-President (2017-18) & External Affairs (2018-19) – AGEPoly

EPFL's general student association has 8'000 active members and an annual budget of around 1M CHF.

Board Member of the EPFL School Assembly (09.2016 – 08.2019)

EPFL School's highest representation organ values the interests of all EPFL students & employees. I represented EPFL students in front of Swiss politicians and the ETH Domain.

David Cleres

Information

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Switzerland

Socials



DCleres



David Cleres



dcleres

Languages

German: Mother tongue
French: Mother tongue
English: Fluent (C2)

Soft Skills

Ethical
Teamwork
Reliable
Leadership
Communication



Empathy
Ambition

Hobbies

Cycling, Building a Van,
Volleyball, Running,
Swimming

Publications

2023

- Barata F, Cleres D, Tinschert P, Shih I, Rassouli F, Boesch M, Brutsche M, Fleisch E. **Nighttime continuous contactless smartphone-based cough monitoring for the ward: A validation study** JMIR Formative Research. 17/01/2023:38439 **ETH zürich**

2022

- Jokic, S., Cleres, D., Rassouli, F., Steurer-Stey, C., Puhon, M.A., Brutsche, M., Fleisch, E. and Barata, F., 2022. **TripletCough: Cougher Identification and Verification from Contact-Free Smartphone-Based Audio Recordings Using Metric Learning.** IEEE Journal of Biomedical and Health Informatics. **ETH zürich**
- Rassouli, F., Boesch, M., Baty, F., Tinschert, P., Barata, F., Shih, I., Cleres, D., Fleisch, E. and Brutsche M.. **Automated cough detection in COVID-19 and non-COVID-19 pneumonia using machine learning-based technology.** European Respiratory Journal Sep 2022, 60 (suppl 66) 1219; DOI: 10.1183/13993003.congress-2022.1219 **ETH zürich**

2021

- Rassouli, F., Boesch, M., Baty, F., Tinschert, P., Barata, F., Shih, I., Cleres, D., Fleisch, E. and Brutsche, M.H., 2021. **Smartphone-enabled detection of Cough in COVID-19 (COCO)–preliminary analysis of an exploratory, observational cohort study.** **ETH zürich**
- Cleres, D., Rassouli, F., Brutsche, M., Kowatsch, T. and Barata, F., 2021, April. **Lena: a Voice-Based Conversational Agent for Remote Patient Monitoring in Chronic Obstructive Pulmonary Disease.** In 26th ACM Conference on Intelligent User Interfaces (ACM IUI 2021). **ETH zürich**
- Cleres, D., Rassouli, F., Fleisch, E., Brutsche, M., Kowatsch, T. and Barata, F., 2021, January. **Smartphone-basierte Hustenerkennung–Auf dem Weg zu einem digitalen Biomarker für chronische Atemwegserkrankungen.** In Fachtagung: Chronisch krank in der digitalen Welt (2021). **ETH zürich**
- Rassouli, F., Boesch, M., Baty, F., Tinschert, P., Barata, Cleres, D., Kowatsch, T., Fleisch, E. and Brutsche, M., 2021. **Preliminary results of an exploratory, observational cohort study on smartphone-enabled cough detection in patients with COVID-19.** In European Respiratory Society International Congress (ERS 2021). **ETH zürich**

2020

- Huebsch, N., Charrez, B., Siemons, B., Boggess, S.C., Wall, S., Neiman, G., Charwat, V., Jäger, K.H., Cleres, D., Telle, A. and Lee-Montiel, F.T., 2020. **Metabolically-Driven Maturation of hiPSC-Cell Derived Cardiac Chip.** *Nature Biomedical Engineering* **Berkeley**

Awards & Prizes

Digital Economy Award – NextGen Hero – 2024

The award is given to a personality between the ages of 20 and 28 who has extraordinary potential to help shape Switzerland's digital future.

Forbes 30 under 30 – 2022

A list of people under 30 years old issued annually by Forbes magazine to acknowledge their extraordinary achievements in their field.

Zeno Karl Schindler Foundation - Master Thesis Grant – 2019

Academic Excellence Grant of 15'000 CHF. The grant aims to encourage research collaboration between universities in Switzerland and the US

IBM Research Price in Computational Engineering – Master Thesis Award – 2019

This prize rewards the best master thesis, undertaken at EPFL, to promote excellent research in modeling and simulation in different fields of engineering

Swiss U19 Volleyball Vice-Champion (2013 and 2014)

Certificates

Good Clinical Practice – Module 1, 2, and 3 - 2021 - University of Zurich

Be able to perform the responsibilities and tasks involved in organizing and conducting clinical trials and / or human research projects.

Open-Source Contributions

[keras_cv_attention_models](#) - Attention for Keras - +300 Stars

[swissgeol-boreholes-dataextraction](#) – Developed for the Swiss Federal Office of Topography

[Parkinson_Disease_ML](#) - A comparative analysis of speech signal processing

[DeepShape](#) - Deep learning on 3d meshes via model simplification

[ollama-docker-macOS](#) - Docker Compose environment on MacOS running Ollama