

# Axel Chemla–Romeu-Santos

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## Work experience

### Science & Technology

**2025-2030 : Post-Doctorate** (ERC G3S-Université Paris 8)

- representation & generative machine learning for spatial audio & music

**2022 - 2025 : Freelance Researcher** in extrapolative & experimental machine learning

**2021 - 2022 : Post-Doctorate** (ACIDS-IRCAM)

- network bending & active divergence of generative models
- maximum divergence frameworks & bounded adversarial divergence
- organisation and performance for ACIDS workshops
- collaboration with various artists
- DSP for RAVE-VST and nn~ with Antoine Caillon

**2020 - 2021 : Research Fellow** (VEOS Digital)

- symbolic generation with transformers for improvisation
- hierarchical chord extraction

**2019 - 2020 : Post-Doctorate** (ACIDS-IRCAM)

- perceptually-informed representations for analysis-synthesis
- un/semi-supervised generative auto-encoders for live performance

**2016 : Research Engineer at IRCAM -**

main developer of SoMax reactive improvisation environment

**2015 : Internship to IRCAM -**

*Planification guidelines for reactive improvisation*

**2014: Internship to PuceMuse -** *Developing real-time sound morphing devices*

## Formation

**2016-2019 : PhD in Computer Science**

« Manifold representations of musical signals and generative spaces »

Directors : Goffredo Haus (IT), Gérard Assayag (FR) - Coordinator : Philippe Esling (FR)

LIM - Università Degli Studi di Milano, Milano, Italy

STMS IRCAM - Sorbonne Universités - CNRS, Paris, France

**2016-2018 : Computer Music Degree (CRR93)**

**2015 : Business Foundations Certificate (INSEAD)**

**2013 - 2015 : Postgraduate Degree in Engineering Sciences**

- 1st year : acoustics, Université Pierre & Marie Curie
- 2nd year : acoustics, signal processing and computer science applied to music (ATIAM) Sorbonne Universités, IRCAM, Télécom ParisTech

**2010 - 2013 :** Double Undergraduate Degree in Engineering Sciences & Music Theory

- Engineering Sciences, Université Pierre & Marie Curie.
- Music & Music Theory, Université Paris Sorbonne IV
- 2013 : Erasmus semester in University of York, UK

## Languages

**French** - native      **English** - common      **Italian** - common  
**Deutsch** - B2      **Japanese** - notions

## Software / Development

**2024-25 :** **developer & maintainer** of *RAVE*, *nn~*, *acids-dataset* for Forum IRCAM

**2024-25 :** **developer** of *torchbend*, network bending toolbox for generative AI

**2023-24 :** **creator & developer** of multi-modal generative toolbox for THE CLOUD

**2023 :** **official maintenance** of *RAVE*, real-time neural audio generation

**2023 :** **creator & developer** of variational synthesis environment *vschaos2*

**2022 :** **co-developer** of *nn~*, interface between ML systems and Max

**2022-2024 :** **DSP Developer / Designer** of *RAVE AU / VST*

**2019 :** **creator & developer** of variational synthesis environment *vschaos*

**2016-2017 :** **research engineer & developer** for the reactive improvisation environment *SoMax*

**2015 :** **software Designer** for light & sound installation *EXO* with Félicie d'Estienne D'Orves

## Music / Cinema / Dance / Performance

**2025 :** **I.R.R.R.I.** avec Pierce Warnecke & Matthew Biederman for IRCAMLive

**2024 :** **IRCAM Generative Prize** #3 position for *genesis*->

**2024 :** Performer at **AIMC2024** with *Daim™* & *genesis*->

2023 : composer for *L'Amour & la Violence*, Régis Martrin-Donos

**2023- :** **AI expert & programmer / music performer for THE CLOUD**, Arkadi Zaidés

2023 : organiser / Performer of ACIDS Workshop Gamma (AI Music, Cirque Électrique)

**2023 :** **conceiver / performer** of *genesis*-> laureate for Sonic Experiment's call of ZKM (Karlsruhe)

2023 : composer for *Guerre*, Régis Martrin-Donos

**2023 - :** **co-composer** of *you will get what you leave behind*, AI-based performed triptych on artificial reveries with Antoine Caillon. Resident in Chateau Éphémère (Paris)

2022 / 2023 : AI consultant for cinema school Fresnoy (Tourcoing)

2022 : organiser / Performer of ACIDS Workshop Beta (AI Music, Cirque Électrique)

**2022 :** **composer** of *aletheia*, piece for hacked AI generators (AIMC2022)

2021 : producer of *Azul Alpha* album

2020 : audio mastering of *Les Iles Périphériques* (Alice Brygo, Fresnoy)

2020 : producer of *Mer* album

**2019 : composer / producer** of *Malchut*, Kenoma

**2019 - : co-composer** of *ægo*, AI-based human-machine performance (with Hugo Scurto, CMMR2019)

2019 - : co-founder of musical design collective w.lfg.ng

**2018 - : co-composer** and producer in maximalist electronic trio **Daim**

2017 : electro-acoustic coordinator for re-creation of *L'Esprit des Dunes*, Université Paris 8

**2016 - : Lead Composer & Sound Engineer** in *Théâtre de la Suspension*

- *Fils de Chien* (2019)

- *Les Sept Colis de Nestor Crevelong* (2021)

- *Le Grand Œuvre de René Obscur* (2023)

- *L'Alphabet des Providences* (2025-2026)

2015 : Sound Designer for *Le Maître et Marguerite*, La Manufacture (Lausanne)

2013: Sound Designer for game project *Evazion* with Sophia Antipolis - Cannes

## Workshops / Presentations

**2026 : A sensitive approach to web archives through AI**, Luxembourg Centre for Contemporary and Digital History @ AI through History, History through AI

**2026 : Fictions, faussaires, fantômes : une expérience de recherche-crédation avec les skyblogs**, Université Grenoble Alpes @ Créativité et hétérogénéité langagière dans les pratiques d'écriture du quotidien)

**2025 : Whitehead Lecture** at Goldsmiths University & University of York :

*Experimental & divergent approaches to audio neural synthesis for creation*

**2025 : Presentation** at Université Paris 8 : *Approches expérimentales de l'intelligence artificielle générative pour la création musicale*

**2024 : organiser / performer** - *ACIDS Improvisation* at Chateau Éphémère

**2024 : organiser / performer** - *ACIDS Workshop Delta*

**2023 : Presentation** at Université Paris Sorbonne: *Extrapolation & co-crédation : perspectives pour un machine learning créatif*

**2023 : organiser / performer** - *ACIDS Workshop Gamma*

**2022 : organiser / speaker** in *New Tools for Musical Creativity with Neural Audio Synthesis*, NIME2022

**2022 : organiser / performer** - *ACIDS Workshop Beta*

**2022 : organiser / performer** - *Cirque Laboratoire*, Cirque Électrique with students from Centre National des Arts du Cirque

**2022 : organiser / performer** - *ACIDS Workshop Alpha*

## Teaching

- **2026 : Introduction to digital audio**, Undergruate course (Université Paris 8)
- **2026 : Creative ML MaxMSP and AbletonLive** trainer
- **2025 : A Sensitive Approach to Web Archives: Skyblogs** with Emmanuelle Bermes & Marina Hervieu (Ecole des Chartes, Bibliothèque Nationale de France)
- **2025 : AI for music composition MOOC** for Hamburg Open Online University
- **2024 : trainer** at ACIDS AI Audio Course, IRCAM
- **2024** : tutorial videos for RAVE-VST & RAVE training for Forum Ircam
- **2021** : trainee supervision of Sarah Nabi
- **2019** : trainee supervision of Constance Douwes
- **2018** : ATIAM post-graduate degree course: « *Variational methods for machine learning* »
- **2017-2021** : AI project supervision for ATIAM post-graduate degree
- **2015-2016** : tutor for Paris Sorbonne Engineering Sciences' undergraduate degree

## Publications

- Chemla—Romeu-Santos A., *vers une écologie créative de l'IA?*, Revue Télécom Paris-Tech #214, 2024
- Chemla—Romeu-Santos A., Dobricic I., Zaides A., *The Cloud : une œuvre instantanée*, Culture & Recherche n°147, 2024
- Scurto H. & Chemla—Romeu-Santos Axel, *Deeply Listening Through/Out the Deepscape*, ISEA2023
- Chemla—Romeu-Santos A. & Esling P., *Creative divergent synthesis with generative models*(arXiv)
- Chemla—Romeu-Santos A., *aletheia*, AIMC2022 (musical paper)
- Chemla—Romeu-Santos A. & Esling P., *Challenges in creative generative models: a divergence maximization perspective*, AIMC2022 (research paper)
- Chemla—Romeu-Santos A., *Représentations variationnelles inversibles: Une nouvelle approche pour la synthèse sonore*, JIM, 2020
- Chemla—Romeu-Santos A., Scurto H. *ægo*. CMMR, 2019.
- Chemla—Romeu-Santos A., Scurto H. *Machine Learning for Computer Music Multidisciplinary Research: A Practical Case Study*. CMMR, 2019.
- Esling P., Masuda N., Bardet A., Despres R., Chemla—Romeu-Santos A. *Universal audio synthesizer control with normalizing flows*. DaFX Proceeding 2019 (2019)
- Chemla—Romeu-Santos A., Ntalampiras S., Esling P., Haus G., Assayag G. *Cross-Modal Variational Inference for Bijective Signal-Symbol Translation*. DaFX Proceedings 2019 (2019).
- Esling, p., Chemla—Romeu-Santos, A., Bitton A. *Generative Timbre Spaces: Regularizing Variational Auto-Encoders With Perceptual Metrics* , DafX Proceedings 2018 (2018)

- Esling, P., Chemla—Romeu-Santos, A., Bitton, A. *Bridging audio analysis, perception and synthesis with perceptually-regularized variational timbre spaces* , ISMIR2018 (2018)
- Bitton, A., Esling, P., Chemla—Romeu-Santos, A. *Modulated Variational auto-Encoders for many-to-many musical timbre transfer* arxiv.org (2018)
- Nika, J., Déguernel, K., Chemla—Romeu-Santos, A. *DYCI2 agents: merging the "free", "reactive", and "scenario-based" music generation paradigms*. International Computer Music Conference (2017)
- Chemla—Romeu-Santos, A. *Guidages de l'Improvisation*. HAL, Master's thesis (2015)

## Reviewing activities

**2026** : 26th International Conference on New Interfaces for Musical Expression (NIME)

International Computer Music Conference 2026 (ICMC)

Journées d'Informatique Musicale 2026 (JIM)

**2025** : 25th International Conference on New Interfaces for Musical Expression (NIME)

International Joint Conference on Neural Networks (IJCNN)

**2020** : Sound and Music Computing 2020/XXIII Colloquio di Informatica Musicale (SMC)