Axel Chemla–Romeu-Santos

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Work experience

Science & Technology

2021 - 2022 : Post-Doctorate (ACIDS-IRCAM)
- network bending & active divergence of generative models
- maximum divergence frameworks & bounded adversarial divergence
- organization 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 - 2017 : Sound Engineer / **composer** *Four Corners of a Square with its Center Lost*, Théâtre de la Suspension

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*

Software / Development

2023-24 : creator & developer of multi-modal generative toolbox for THE CLOUD
2024 : developer of *torchbend*, network bending toolbox for generative AI
2024 : **official documentation** & tutorials for RAVE, IRCAM Forum
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 of reactive improvisation environment SoMax*
2015 : **software Designer** for light & sound installation *EXO* with Félicie d'Estienne D'Orves

Music / Cinema / Dance / Performance

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

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

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

2023- : **composer / AI expert & programmer / performer in THE CLOUD**, Arkadi Zaides

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

2023 : **conceptor / 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 Éphèmere (Paris)

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

2022 : organizer / 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 *aego*, 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
- Four Corners of a Square with its Center lost (audio spatialization, composition, sound design)
- Fils de Chien (composition, sound design)
- Les Sept Colis de Nestor Crevelong (composition, sound design)
- Le Grand Œuvre de René Obscur (composition, sound design, performance)
- L'Alphabet des Providences (composition, sound design, performance)

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

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

Workshops

- **2024** : **organizer / performer** of *ACIDS Workshop Delta*, Cirque Électrique
- **2023** : **organizer / performer** of *ACIDS Workshop Gamma*, Cirque Électrique
- **2022** : **organizer / speaker** in *New Tools for Musical Creativity with Neural Audio Synthesis*, NIME2022 (coordinator & speaker)
- **2022** : **organizer / performer** of *ACIDS Workshop Alpha*, Cirque Électrique
- **2022** : **organizer / performer** of *Cirque Laboratoire*, Cirque Électrique with students from Centre National des Arts du Cirque
- **2022** : **organizer / performer** of *ACIDS Workshop Beta*, Cirque Électrique

Publications

- Chemla—Romeu-Santos A., *vers une écologie créative de l'IA?*, Revue Télécom Paris-Tech #214
- 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. *aego*. 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. *Guidges de l'Improvisation*. HAL, Master's thesis (2015)

Formation

2010 - 2013 : Double Undergraduate Degree in Sciences & Music Theory
- Engineering Sciences, Université Pierre & Marie Curie.
- Music & Music Theory, Université Paris Sorbonne IV
- 2013 : Erasmus semester in University of York, UK

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

2015 : Business Foundations Certificate (INSEAD)

2016-2018 : Computer Music Degree (CRR93)

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

Languages

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