Axel Chemla—Romeu-Santos

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Work experience

Science & Technology

2013: Sound Designer for game project *Evazion* with Sophia Antipolis - Cannes
2014: Internship to **PuceMuse** - *Developing real-time sound morphing devices*
2015 : Internship to **IRCAM** -
   Planification guidelines for reactive improvisation
2015 : **Software Designer** for light & sound installation *EXO* with Félicie d'Estienne D'Orves
2016 : **Research Engineer at IRCAM** -
   main developer of SoMax reactive improvisation environment
2015 : **Sound Designer** for educational software *GeoVisit*, Université Pierre & Marie Curie
2016 - 2017 : **Sound Engineer** / **composer** *Four Corners of a Square with its Center Lost*,
         Théâtre de la Suspension
2017 : **electro-acoustic coordinator** for re-creation of *L'Esprit des Dunes*, Université Paris 8
2019 - 2020 : **Post-Doctorate** (ACIDS-IRCAM)
      - perceptually-informed representations for analysis-synthesis
      - un/semi-supervised generative auto-encoders for live performance
2020 - 2021 : **Research Fellow** (VEOS Digital)
      - symbolic generation with transformers for improvisation
      - hierarchical chord extraction
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
2022 / 2023 : AI consultant for cinema school Fresnoy (Tourcoing)

Development

2015 : **Software Designer** for light & sound installation *EXO* with Félicie d'Estienne D'Orves
2016-2017 : **Research engineer** *developer of reactive improvisation environment SoMax*
2019 : **Creator & developer** of variational synthesis environment *vschaos*
2022 : **Co-developer** of nn~, interface between ML systems and Max
2022- : **DSP Developer / Designer** of RAVE AU / VST
2023 : **developer** of active_divergence, network bending toolbox for generative AI
2023 : **official maintenance** of RAVE, real-time neural audio generation

Music / Cinema / Dance / Performance

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

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)

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

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

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

2019 : composer / producer of *Malchut*, Kenoma

2020 : producer of *Mer* album

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

2021 : producer of *Azul Alpha* album

2022 : organizer / Performer of ACIDS Workshop Alpha (AI Music, Cirque Électrique)

2022 : organizer / Performer of Cirque Laboratoire (Circus + AI, Cirque Électrique)

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

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

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)

2023 : composer for *Guerre*, Régis Martrin-Donos (NAVA2023)

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

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

2023 : composer / AI expert / performer in THE CLOUD, Arkadi Zaides, contemporary dance

Workshops

- **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
- **2023 : organizer / performer** of *ACIDS Workshop Beta*, Cirque Électrique

Formation

2010 - 2013 : Double Undergraduate Degree in Sciences & Music Theory
- Engineering Sciences, Université Pierre & Marie Curie.
- Music & Music Theory, Université Paris Sorbonne IV

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

Publications

- 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)

Languages

French – native   English – common   Italian – common   Deutsch – B2