

# Dario Sanfilippo

ALGORITHMIC COMPOSER · AUDIO DEVELOPER · MUSICAL COMPLEX ADAPTIVE SYSTEMS EXPERT

Sicily, Italy

+393714812735 | [sanfilippodario@gmail.com](mailto:sanfilippodario@gmail.com) | [www.dariosanfilippo.com](http://www.dariosanfilippo.com) | [dariosanfilippo](https://www.instagram.com/dariosanfilippo) | [@dariosanfilippo](https://twitter.com/dariosanfilippo) | [Dario Sanfilippo](https://www.facebook.com/DarioSanfilippo)

## Education

### The University of Edinburgh

PHD IN CREATIVE MUSIC PRACTICE

Edinburgh, UK

Sep. 2015 - Aug. 2019

- Thesis title: "Complex musical behaviours via time-variant audio feedback networks and distributed adaptation: a study of autopoietic infrastructures for real-time performance systems." Supervisors: Martin Parker, Michael Edwards, Michael Newton.

### Conservatory of Naples

MA IN MUSIC AND NEW TECHNOLOGIES

Naples, Italy

Sep. 2011 - May 2013

- Thesis title: "Aesthetics, characteristics, and implementation of music feedback systems." Supervisor: Agostino Di Scipio.

### Conservatory of Trapani

BA IN MUSIC AND NEW TECHNOLOGIES

Trapani, Italy

Sep. 2007 - Mar. 2011

- Thesis title: "Human-machine interaction performance with emergent music systems."

## Expertise

### Sound and Music

Algorithmic composition, live electronics, improvisation, human-machine interaction, autonomous installations, acoustics, psychoacoustics, acoustic ecology, sound design, live recording, mixing, mastering.

Cybernetics, chaos, complexity, adaptation, evolvability, machine listening, artificial life, artificial intelligence, agency, information

### DSP

processing, music information retrieval, bitstream audio, feedback networks, time-variant systems, nonlinearities, filtering, non-standard synthesis, modelling.

### Programming

C, C++, Faust, Pure Data, Lisp, Lua, Python, LaTeX.

### Languages

English (fluent), Italian (native).

## Professional Experience

### FL Studio

RESEARCHER AND AUDIO DEVELOPER

Ghent, Belgium

Sep. 2022 - present

- Algorithmic composition, DSP, C++ audio programming.

### n-Track Software

RESEARCHER AND AUDIO DEVELOPER

Rome, Italy

Jun. 2021 - Aug. 2022

- DSP, C++ audio programming.

### Music and Performing Arts University (Rotting Sounds)

RESEARCHER

Vienna, Austria

Jun. 2020 - Jun. 2021

- 1-bit audio, DSP, music complex adaptive systems, audio programming.

### Music and Performing Arts University (AAPU)

RESEARCHER

Vienna, Austria

Sep. 2018 - Jun. 2021

- 1-bit audio, DSP, music complex adaptive systems, audio programming.

### Freelance

COMPOSER AND PERFORMER

World

Jan. 2005 - Present

- Autonomous systems, human-machine interaction, cybernetic music.

### Music and Performing Arts University (Rotting Sounds)

RESEARCHER

Vienna, Austria

Dec. 2018 - Mar. 2019

- Performance, composition, installation, complex adaptive systems, DSP, audio programming.

## The University of Edinburgh

Edinburgh, UK

TEACHING FELLOW

Jan. 2016 - May 2018

- Sonic structures (ARCH11009): post-grad course on DSP techniques implemented and deployed in real-time environments such as Pure Data, MaxMSP, and Supercollider.
- Non-real-time systems (MUSI11019): post-grad course on the LISP/Slippery Chicken environment for algorithmic composition.
- Algorithmic composition (MUSI10087): undergrad course on the LISP/Slippery Chicken environment for algorithmic composition.
- Digital media studio project (ARCH11006): undergrad and post-grad course focused on practical implementations and software-hardware hybrids for interactive sound environments and installation works.
- Adaptive audio signal processing workshop: three-day workshop for undergrad and post-grad students on adaptive time-domain algorithms for complex sound synthesis in Pure Data.

## Abertay University

Dundee, UK

TEACHING FELLOW

Jan. 2016 - Apr. 2016

- Audio programming (CMP407): undergrad course on object-oriented audio programming in Pure Data.

## Music and Performing Arts University (AAPU)

Vienna, Austria

RESEARCHER AND AUDIO DEVELOPER

Dec. 2014 - Aug. 2015

- 1-bit audio, DSP, audio programming.

## Guest Lectures

---

### KTH Royal Institute of Technology

Stockholm, Sweden

SOUND AND MUSIC COMPUTING DEPARTMENT

May. 2022

- Complex adaptation in algorithmic composition and DSP

### Music and Performing Arts University

Graz, Austria

INSTITUTE FOR ELECTRONIC MUSIC AND ACOUSTICS (IEM)

Mar. 2020

- Music complex adaptive systems, DSP, Faust audio programming.

### University of Helsinki

Helsinki, Finland

SIBELIUS ACADEMY

May 2019, Apr. 2018, Apr. 2017

- Music complex adaptive systems, DSP, Faust audio programming.

### City of Edinburgh

Edinburgh, UK

CITY ART CENTRE

Nov. 2016

- Distributed adaptation techniques for autonomous music.

### The University of Edinburgh

Edinburgh, UK

WEE RED BAR

May 2016

- Ecosystemic performance theory and applications.

### University of Applied Sciences

Salzburg, Austria

DESIGN, MEDIA, AND ARTS DEPARTMENT

Apr. 2015

- Ecosystemic performance theory and applications, adaptive signal processing.

### Music and Theatre University

Hamburg, Germany

NEW MUSIC DEPARTMENT

Feb. 2015

- Nonlinear feedback systems, Pure Data programming, improvisation.

### Royal Conservatory

The Hague, The Netherlands

INSTITUTE OF SONOLOGY

Nov. 2013

- Music cybernetics and systems theory.

### Goldsmiths University

London, UK

ELECTRONIC MUSIC DEPARTMENT

Nov. 2013

- Music cybernetics and systems theory.

### Institute for Sonic Art Research

Ljubljana, Slovenia

EARZOOM

Oct. 2013

- Music cybernetics and systems theory, human-machine interaction performance.

### Logos Foundation

Ghent, Belgium

CENTRE FOR EXPERIMENTAL MUSIC

May 2013

- Music cybernetics and systems theory, human-machine interaction performance.

## Music and Performing Arts University

ELECTRONIC MUSIC DEPARTMENT

- Music cybernetics and systems theory, human-machine interaction performance, DSP, audio programming.

Vienna, Austria

May 2013

## Music and Performing Arts University

INSTITUTE FOR ELECTRONIC MUSIC AND ACOUSTICS (IEM)

- Music complex adaptive systems, DSP, Faust audio programming.

Graz, Austria

May 2013

## Peer-reviewed Articles

---

### The aesthetics of music complex systems

ORGANISED SOUND

- D. Sanfilippo

Cambridge University Press

2023 (forthcoming)

### Towards the formalisation of performance modalities and interfaces in human-machine interaction

ECHO, A JOURNAL OF MUSIC, THOUGHT, AND TECHNOLOGY

- D. Sanfilippo

Orpheus Institute

2022

### Complex adaptation in audio feedback networks for the synthesis of music and sounds

COMPUTER MUSIC JOURNAL

- D. Sanfilippo

MIT Press

2021

### Time-domain algorithms for low-level and high-level audio information processing

COMPUTER MUSIC JOURNAL

- D. Sanfilippo

MIT Press

2021

### Defining ecosystemic agency in live performance. The Machine Milieu project as practice-based research

ARRAY JOURNAL

- A. Di Scipio and D. Sanfilippo

International Computer Music Association

2019

### Time-variant infrastructures and dynamical adaptivity for higher degrees of complexity in autonomous music feedback systems: the Order from Noise (2017) project

MUSIC/TECHNOLOGY JOURNAL

- D. Sanfilippo

Firenze University Press

2018

### Feedback systems: an analytical framework

COMPUTER MUSIC JOURNAL

- D. Sanfilippo and A. Valle

MIT Press

2013

### Turning perturbation into emergent sound, and sound into perturbation

INTERFERENCE JOURNAL

- D. Sanfilippo

Online

2013

### Osservare la macchina performante e intonare l'ambiente: Microphone di David Tudor

LE ARTI DEL SUONO REVIEW

- D. Sanfilippo

Aracne Editrice

2012

## Peer-reviewed Papers

---

### Envelope following via cascaded exponential smoothers for low-distortion peak limiting and maximisation

INTERNATIONAL FAUST CONFERENCE

- D. Sanfilippo

Conference proceedings,  
Saint-Etienne, France

2022

### Combining zeroth and first-order analysis with Lagrange polynomials to reduce artefacts in live concatenative granular processing

DIGITAL AUDIO EFFECTS (DAFx) CONFERENCE

- D. Sanfilippo and J. D. Parker

Conference proceedings, Vienna,  
Austria

2021

### Constrained differential equations as complex sound generators

SOUND AND MUSIC COMPUTING CONFERENCE

- D. Sanfilippo

Conference proceedings, Turin, Italy

2021

## **The Edge of Chaos library: a large set of Faust functions for the implementation of music complex adaptive systems**

INTERNATIONAL FAUST CONFERENCE

- D. Sanfilippo

*Conference proceedings,  
Saint-Denis, France*

2020

## **Creative use of bitstream DSP in Faust**

INTERNATIONAL FAUST CONFERENCE

- T. Bovermann and D. Sanfilippo

*Conference proceedings,  
Saint-Denis, France*

2020

## **Environment-mediated coupling of autonomous sound-generating systems in live performance: an overview of the Machine Milieu project**

SOUND AND MUSIC COMPUTING CONFERENCE

- D. Sanfilippo and A. Di Scipio

*Conference proceedings, Espoo,  
Finland*

2017

## **A practical and theoretical introduction to chaotic musical systems**

INTERNATIONAL CONFERENCE ON LIVE INTERFACES

- T. Clutterbuck, T. Mudd, D. Sanfilippo

*Conference proceedings, Brighton,  
UK*

2016

## **Towards a typology of feedback systems**

INTERNATIONAL COMPUTER MUSIC CONFERENCE

- D. Sanfilippo and A. Valle

*Conference proceedings, Ljubljana,  
Slovenia*

2012

## **Heterogeneously coupled feedback systems: the |. project**

INTERNATIONAL COMPUTER MUSIC CONFERENCE

- D. Sanfilippo and A. Valle

*Conference proceedings, Ljubljana,  
Slovenia*

2012

## **LIES (distance/incidence) 1.0: a human-machine interaction performance**

COLLOQUIUM OF MUSICAL INFORMATICS

- D. Sanfilippo

*Conference proceedings, Trieste,  
Italy*

2012

## **CDs**

---

### **Machine milieu**

TOXO RECORDS

- A. Di Scipio and D. Sanfilippo. Recorded in L'Aquila.

*Italy*

2021

### **Fame d'aria**

TSUKU BOSHI RECORDS

- M. "SEC\_" Napolitano and D. Sanfilippo. Recorded in Naples.

*France*

2015

### **Sculptures musicales and other devices**

DIE SCHACHTEL RECORDS

- A. Di Scipio, D Sanfilippo, and others. Recorded in Naples.

*Italy*

2014

### **Hopeful monster**

DIE SCHACHTEL RECORDS

- D. Sanfilippo, A. Secchia, G. Pagano, A. Valle, D. Sciajno. Recorded in Palermo.

*Italy*

2010

### **Hums**

BOWINDO RECORDS

- T. Hodgkinson, D. Sanfilippo, A. Secchia, G. Pagano, M. Pianges, D. Sciajno. Recorded in Palermo.

*Italy*

2009

### **Premio malattia**

CREATIVE SOURCES RECORDS

- D. Sanfilippo. Recorded in Trapani.

*Portugal*

2009

## **Awards and Grants**

---

2020	<b>Science Grant</b> , City of Vienna	<i>Vienna, Austria</i>
2020	<b>Artistic Research Grant</b> , City of Vienna	<i>Vienna, Austria</i>
2019	<b>FFG Grant (Innovation Check)</b> , Austrian Research Promotion Agency	<i>Vienna, Austria</i>
2015	<b>Thomas Laing Reilly full-time PhD Scholarship</b> , The University of Edinburgh	<i>Edinburgh, UK</i>
2014	<b>Artistic Research Grant</b> , University of Toronto	<i>Toronto, Canada</i>
2012	<b>Best Paper Award</b> , International Computer Music Conference	<i>Ljubljana, Slovenia</i>

## Commissions

---

### **BASP**

*Vienna, Austria*

ROTTING SOUNDS

2021

- Bitstream autonomous music system by D. Sanfilippo and Till Bovermann.

### **Acoustic Shadows**

*Vienna, Austria*

CITY OF VIENNA

2020

- Autonomous music system by D. Sanfilippo and Paul Gruendorfer.

### **Phase Transitions**

*Vienna, Austria*

ROTTING SOUNDS

2019

- Three-month long piece through autonomous adaptive music system.

### **Order from Noise**

*Vienna, Austria*

INTERNATIONAL SOCIETY FOR CONTEMPORARY MUSIC (IGNM)

2019

- Solo performance.

### **Loretta Strong**

*Nancy, France*

ULTIMA NECAT THEATRE COMPANY

2015

- Development of an autonomous music system for a theatre piece.

### **Ice/Fire**

*Vienna, Austria*

KUNST RADIO

2014

- Compositions by D. Sanfilippo and Peter Kutin.

### **Sea of Illusion**

*Trapani, Italy*

MUNICIPALITY OF TRAPANI

2010

- Composition with photographs by D. Sanfilippo and Alfredo D'Amato.

## Live Performance

---

Oct. 2024	<b>RWE Pavillon, NOW! Festival</b> , Machine Milieu (Sanfilippo and Di Scipio duo)	<i>Essen, Germany</i>
Apr. 2023	<b>Chateau Rouge</b> , Velak concert series	<i>Vienna, Austria</i>
Mar. 2022	<b>TV Control</b> , Feedback Musicianship Network Symposium	<i>Athens, Greece</i>
Sep. 2021	<b>The University of Music and Performing Arts</b> , Rotting Sounds Symposium	<i>Vienna, Austria</i>
Sep. 2021	<b>New Adits Festival</b> , duo with Peter Kutin	<i>Klagenfurt, Austria</i>
Jun. 2021	<b>Künstlerhaus FAKTOR</b> , solo at Blurred Edges festival	<i>Hamburg, Germany</i>
Dec. 2020	<b>The University of Edinburgh</b> , solo.	<i>Edinburgh, UK</i>
Jun. 2019	<b>Republik Kugelmugel</b> , solo for the Klub Moozak concert series.	<i>Vienna, Austria</i>
Jun. 2019	<b>Steinergasse 8</b> , duo with Daniel Lercher for Der Blöde Dritte Mittwoch concert series.	<i>Vienna, Austria</i>
Jun. 2019	<b>Echoraum</b> , solo and duo with Philip Leitner for the International Society for Contemporary Music.	<i>Vienna, Austria</i>
Mar. 2019	<b>Music and Performing Arts University</b> , solo for the Rotting Sounds project.	<i>Vienna, Austria</i>
Nov. 2018	<b>Brick 5</b> , solo for the Velak Gala concert series.	<i>Vienna, Austria</i>
Oct. 2018	<b>Zentrale</b> , solo.	<i>Vienna, Austria</i>
Apr. 2018	<b>Sibelius Academy</b> , solo.	<i>Helsinki, Finland</i>
Oct. 2017	<b>The Biscuit Factory</b> , solo.	<i>Edinburgh, UK</i>
Mar. 2017	<b>National Centre for Space Studies</b> , duo with Gael Leveugle for the Sidération Festival.	<i>Paris, France</i>
Oct. 2016	<b>Cafe Oto</b> , duo with Mimmo "SEC_" Napolitano.	<i>London, UK</i>
Mar. 2016	<b>The University of Edinburgh</b> , solo.	<i>Edinburgh, UK</i>
Apr. 2015	<b>Theatre Divadlo 29</b> , duo with Mimmo "SEC_" Napolitano.	<i>Pardubice, CZ</i>
Feb. 2015	<b>Music and Theatre University</b> , solo.	<i>Hamburg, Germany</i>
Jun. 2014	<b>French Institute</b> , trio with Mimmo "SEC_" Napolitano and Jean-Philippe Gross.	<i>Naples, Italy</i>
Nov. 2013	<b>Goldsmiths University</b> , duo with Tim Hodgkinson.	<i>London, UK</i>
Aug. 2013	<b>Casina del Principe</b> , installation for Flussi Festival.	<i>Naples, Italy</i>
May 2013	<b>Logos Foundation</b> , solo.	<i>Ghent, Belgium</i>
May 2013	<b>Galerie Mario Mazzoli</b> , solo.	<i>Berlin, Germany</i>
Dec. 2012	<b>Castel Sant'Elmo</b> , homage to John Cage: realisation of Sculptures Musicales.	<i>Naples, Italy</i>
Nov. 2012	<b>Auditorium Casa della Musica</b> , solo for Colloquium of Musical Informatics.	<i>Trieste, Italy</i>
Sep. 2012	<b>Španski Borci</b> , solo for the International Computer Music Conference.	<i>Ljubljana, Slovenia</i>
May 2012	<b>Conservatory of Latina</b> , installation for Le Forme del Suono Festival.	<i>Latina, Italy</i>
May 2012	<b>Conservatory of Naples</b> , solo.	<i>Naples, Italy</i>
Apr. 2012	<b>University of Bangor</b> , installation for the Inter/actions symposium.	<i>Bangor, UK</i>
Nov. 2011	<b>Bunkier Sztuki</b> , solo for the Audio Art Festival.	<i>Krakow, Poland</i>
Jul. 2011	<b>Conservatory of Padova</b> , solo for the Sound and Music Computing conference.	<i>Padova, Italy</i>