Dario **Sanfilippo**

ALGORITHMIC COMPOSER · AUDIO DEVELOPER · MUSIC COMPLEX ADAPTIVE SYSTEMS EXPERT

Sicily, Italy

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Education _____

The University of Edinburgh   *Edinburgh, UK*

PHD IN CREATIVE MUSIC PRACTICE   *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   *Naples, Italy*

MA IN MUSIC AND NEW TECHNOLOGIES   *Sep. 2011 - May 2013*

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

Conservatory of Trapani   *Trapani, Italy*

BA IN MUSIC AND NEW TECHNOLOGIES   *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.

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

Image-Line   *Ghent, Belgium*

RESEARCHER AND AUDIO DEVELOPER   *Sep. 2022 - present*

• Algorithmic music, DSP, C++ audio programming.

n-Track Software Ltd.   *Rome, Italy*

RESEARCHER AND AUDIO DEVELOPER   *Jun. 2021 - Aug. 2022*

• DSP, C++ audio programming.

Music and Performing Arts University (Rotting Sounds)   *Vienna, Austria*

RESEARCHER   *Jun. 2020 - Jun. 2021*

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

Music and Performing Arts University (AAPU)   *Vienna, Austria*

RESEARCHER   *Sep. 2018 - Jun. 2021*

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

Freelance   *World*

COMPOSER AND PERFORMER   *Jan. 2005 - Present*

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

Music and Performing Arts University (Rotting Sounds)   *Vienna, Austria*

RESEARCHER   *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
Vienna, Austria
Electronic Music Department
May 2013
- Music cybernetics and systems theory, human-machine interaction performance, DSP, audio programming.

Music and Performing Arts University
Graz, Austria
Institute for Electronic Music and Acoustics (IEM)
May 2013
- Music complex adaptive systems, DSP, Faust audio programming.

Peer-reviewed Articles

The aesthetics of music complex systems
Cambridge University Press
Organised Sound
2022 (forthcoming)
- D. Sanfilippo

Towards the formalisation of performance modalities and interfaces in human-machine interaction
Orpheus Institute
Echo, a journal of music, thought, and technology
2022
- D. Sanfilippo

Complex adaptation in audio feedback networks for the synthesis of music and sounds
MIT Press
Computer Music Journal
2021
- D. Sanfilippo

Time-domain algorithms for low-level and high-level audio information processing
MIT Press
Computer Music Journal
2021
- D. Sanfilippo

Defining ecosystemic agency in live performance. The Machine Milieu project as practice-based research
International Computer Music Association
Array Journal
2019
- A. Di Scipio and D. Sanfilippo

Time-variant infrastructures and dynamical adaptivity for higher degrees of complexity in autonomous music feedback systems: the Order from Noise (2017) project
Firenze University Press
Music/Technology Journal
2018
- D. Sanfilippo

Feedback systems: an analytical framework
MIT Press
Computer Music Journal
2013
- D. Sanfilippo and A. Valle

Turning perturbation into emergent sound, and sound into perturbation
Online
Interference Journal
2013
- D. Sanfilippo

Osservare la macchina performante e intonare l'ambiente: Microphone di David Tudor
Aracne Editrice
Le Arti del Suono Review
2012
- D. Sanfilippo

Peer-reviewed Papers

Envelope following via cascaded exponential smoothers for low-distortion peak limiting and maximisation
Conference proceedings, Saint-Etienne, France
International Faust Conference
2022
- D. Sanfilippo

Combining zeroth and first-order analysis with Lagrange polynomials to reduce artefacts in live concatenative granular processing
Conference proceedings, Vienna, Austria
Digital Audio Effects (DAFx) Conference
2021
- D. Sanfilippo and J. D. Parker

Constrained differential equations as complex sound generators
Conference proceedings, Turin, Italy
Sound and Music Computing Conference
2021
- D. Sanfilippo

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

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 photographies by D. Sanfilippo and Alfredo D'Amato.

Live Performance

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