

# Stefano D'Angelo

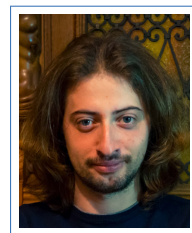
## Curriculum Vitæ

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<http://www.dangelo.audio/>



## PERSONAL INFORMATION

Date of birth April 23, 1987  
Nationality Italian  
Driving license B

## EDUCATION

Sep 2011 **D.Sc. (Tech.) degree in Electrical Engineering**, *Aalto University, School of Electrical Engineering, Department of Signal Processing and Acoustics*, Espoo, Finland.

<http://www.acoustics.hut.fi/>

DOCTORAL THESIS

Title *Virtual analog modeling of nonlinear musical circuits*

Supervisor V. Välimäki

Description Introduction to white-box techniques for modeling and real-time simulation of nonlinear circuits, and presentation of novel methodological and applicative results.

URI <http://urn.fi/URN:ISBN:978-952-60-5906-8>

Sep 2008 **M.Sc. degree in Computer Engineering**, *Politecnico di Torino*, Turin, Italy, 110/110.

Sep 2010 <http://www.dauin.polito.it/>

MASTER'S THESIS

Title *Physics-based modeling for sound processing: theory and implementation*

Supervisors M. Masoero (thesis), M. Karjalainen (project)

Description Overview on physics-based modeling techniques for sound processing, design of a novel audio programming language for this task and implementation of a compiler for such language that generates LV2 plugin libraries.

Sep 2009 **LLP/Erasmus Exchange Programme**, *Aalto University, School of Science and Technology*, Espoo, Finland.

Sep 2005 **B.Sc. degree in Computer Engineering**, *Politecnico di Torino*, Turin, Italy, 110/110.

Jul 2008 <http://www.dauin.polito.it/>

MONOGRAPH

Title *Realizzazione di stage presso Digitec s.r.l. – Realizzazione di driver Linux per video decoder e pannello LCD su piattaforme Freescale/ARM*

Tutors M. Violante (academic), V. Omento (company)

Description Development of Linux drivers for a video decoder and LCD panel on Freescale/ARM platforms.

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## EXPERIENCE

- Mar 2018 **Freelance**, Agropoli, Italy.  
present <http://www.dangelo.audio/>  
Research and development, and maintenance of music DSP algorithms.
- Apr 2015 **DSP engineer**, *Arturia*, Grenoble, France.  
Dec 2017 <http://www.arturia.com/>  
Research, development, and maintenance of music DSP algorithms.
- 2016, 2018 **Scientific revision committee member**, *XXI Colloquio di Informatica Musicale*.  
[http://www.aimi-musica.org/?page\\_id=2984](http://www.aimi-musica.org/?page_id=2984)  
Peer review of submitted papers.
- Dec 2010 **Researcher**, *Istituto Superiore Mario Boella*, Turin (Italy).  
Jul 2011 <http://www.ismb.it/>  
Analysis, architectural design, and development for the webinos project (<http://webinos.org/>).
- May 2009 **Mentor**, *Google Summer of Code 2009*, atheme.org organization – NASPRO project.  
Aug 2009 <https://www.google-melange.com/gsoc/project/details/google/gsoc2009/romen/5668600916475904>  
Supervisor for a university student in developing a modular host for LV2 sound processing plugins.
- Jun 2008 **Mentor**, *Google Summer of Code 2008*, atheme.org organization – NASPRO project.  
Aug 2008 <https://developers.google.com/open-source/soc/2008/#atheme>  
Supervisor for a university student in designing a textual file format to represent FIR and IIR filters in the time domain and in implementing an ad-hoc parser and convolution engine.
- Mar 2008 **Intern**, *Digitec s.r.l.*, Turin, Italy.  
May 2008 <http://www.digitecingegneria.com/>  
Driver and middleware development on Linux embedded systems based on Freescale/ARM architecture.

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## SCIENTIFIC PUBLICATIONS

- Mar 2012 S. D'Angelo and V. Välimäki, "**Wave-Digital Polarity and Current Inverters and Their Application to Virtual Analog Audio Processing**," in *Proc. IEEE Intl. Conf. on Acoust., Speech and Signal Process. (ICASSP)*, Kyoto (Japan), pp. 469–472.
- Oct 2012 R. C. D. Paiva, S. D'Angelo, J. Pakarinen, and V. Välimäki, "**Emulation of Operational Amplifiers and Diodes in Audio Distortion Circuits**," *IEEE Trans. Circuits and Systems-II: Express Briefs*, vol. 59, no. 10, pp. 688–692.
- Feb 2013 S. D'Angelo, J. Pakarinen, and V. Välimäki, "**New Family of Wave-Digital Triode Models**," *IEEE Trans. Audio, Speech and Lang. Process.*, vol. 21, no. 2, pp. 313–321.
- May 2013 S. D'Angelo and V. Välimäki, "**An Improved Virtual Analog Model of the Moog Ladder Filter**," in *Proc. IEEE Intl. Conf. on Acoust., Speech and Signal Process. (ICASSP)*, Vancouver (Canada), pp. 729–733.
- Sep 2013 J. Parker and S. D'Angelo, "**A Digital Model of the Buchla Lowpass-Gate**," in *Proc. 16<sup>th</sup> Intl. Conf. Digital Audio Effects (DAFx-13)*, Maynooth (Ireland).
- Dec 2014 S. D'Angelo and V. Välimäki, "**Generalized Moog Ladder Filter: Part I – Linear Analysis and Parameterization**," *IEEE/ACM Trans. Audio, Speech and Lang. Process.*, vol. 22, no. 12, pp. 1825–1832.
- Dec 2014 S. D'Angelo and V. Välimäki, "**Generalized Moog Ladder Filter: Part II – Explicit Non-linear Model through a Novel Delay-Free Loop Implementation Method**," *IEEE/ACM Trans. Audio, Speech and Lang. Process.*, vol. 22, no. 12, pp. 1873–1883.
- Sep 2018 S. D'Angelo and L. Gabrielli, "**Efficient Signal Extrapolation by Granulation and Convolution with Velvet Noise**," in *Proc. 21<sup>st</sup> Intl. Conf. Digital Audio Effects (DAFx-18)*, Aveiro (Portugal).
- Nov 2018 S. D'Angelo, "**Lightweight Virtual Analog Modeling**," in *XXII CIM Proc.*, Udine (Italy), *invited paper*.

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## SOFTWARE DEVELOPMENT

- Own software NASPRO (<http://naspro.sourceforge.net/>), libinterp (<http://libinterp.sourceforge.net/>), various small projects at <http://github.com/sdangelo>
- Specifications LV2 Dynamic Manifest Specification (<http://lv2plug.in/ns/ext/dynmanifest/>), webinos Event Handling API (<http://dev.webinos.org/specifications/api/events.html>)
- Contributions Lilv (<http://drobilla.net/software/lilv/>), audacious (<http://audacious-media-player.org/>), zynjacku (<http://home.gna.org/zynjacku>), librdf (<http://librdf.org/>), Discount (<http://www.pell.portland.or.us/~orc/Code/discount/>)

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## LANGUAGES

- Mother tongue **Italian** [ita], **Neapolitan** [nap]  
Fluent **English** [eng] (*Cambridge Certificate in Advanced English (CAE) – Dec 2003*)  
Intermediate **French** [fra]

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## COMPUTER SKILLS

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|-----------------------|---|---------------------|---|
| Programming languages | C/C++, JavaScript, x86 and MIPS assembly, PHP, Java                         | Documentation       | LaTeX, AsciiDoc, Doxygen, Natural-Docs, Texinfo, Markdown |
| Development tools     | UNIX/GNU tools, Microsoft Visual Studio, CMake, Mercurial, git, flex, Bison | Operating systems   | UNIX-like, Microsoft Windows, Android, BeOS/Haiku         |
| Scientific tools      | GNU Octave/MATLAB, gnuplot, SPICE, Maxima                                   | Database management | SQL   |
| Web technologies      | HTML, CSS, XML, RDF, Apache, WebIDL   | Certifications      | ECDL (2004)   |

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## AWARDS AND ACHIEVEMENTS

- Jun 2018 Recognized as an individual expert by the Ministry of Higher Education, Research and Innovation of the French Republic for research tax credit purposes.
- Dec 2014 Awarded a scholarship by the Aalto University for having completed the doctoral degree in less than eight semesters and before the age of 30.
- Jan 2014 Accepted to the Aalto ELEC Doctoral School.
- May 2014
- Nov 2013 Awarded a publication bonus by the Department of Signal Processing and Acoustics, School of Electrical Engineering, Aalto University, for co-authoring a journal paper in 2012.
- Jun 2012 Accepted to the Graduate School in Electronics, Telecommunications and Automation (GETA).
- Dec 2013
- May 2012 Awarded a grant for post-graduate research by the Research Foundation of the Helsinki University of Technology.
- Sep 2011 Awarded a scholarship for doctoral studies from the Finnish Government Scholarship Pool by the CIMO Centre for International Mobility.
- Mar 2012
- Sep 2009 Awarded a scholarship for LLP/Erasmus Exchange Programme studies at Aalto University School of Science and Technology by Politecnico di Torino.
- May 2010
- Sep 2005 Ranked #37 over 2535 participants at the admission test for undergraduate studies at Politecnico di Torino.

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## INTERESTS

- Professional Digital signal processing, programming languages, embedded systems, operating systems.
- Music I studied electric bass with Maestro Rocco Basile for a few years and play it at a semi-professional level. I had hundreds of gigs playing this instrument in different bands with both professional and amateur musicians.  
I studied classical piano for four years as a child with Maestro Mirella Vinciguerra and Maestro Daniela Grado, and participated to a few local contests.  
I occasionally play electric guitar, chitarra battente, mandolin, mandola, ocarina, mouth harp, and cajon at a beginner level.  
I have decent knowledge in music theory and history.
- Electronics I enjoy designing, prototyping, and realizing small analog and digital electronic circuits.