

# Emmanouil Theofanis Chourdakis

## Curriculum Vitae

PhD Candidate at Centre for Digital Music  
“Audio-enhanced automatic story generation”  
Electronic Engineering and Computer Science  
Queen Mary University of London

Address: Hidden for Web  
Email: [e.t.chourdakis@qmul.ac.uk](mailto:e.t.chourdakis@qmul.ac.uk)

## Education

- 2014: MSc Digital Music Processing  
Grade Average: 80% (*Distinction*)  
Electronics Engineering &  
Computer Science  
Queen Mary, University of London
- 2011: Engineering Diploma  
Grade: 7.46/10 (*Very Good*)  
Electronics and Computer Engineering  
Technical University of Crete

## Language Skills

- English: TOEFL *Internet-Based Test (iBT)*  
Total score: 103  
Educational Testing Service (ETS)
- First Certificate in English*  
University of Cambridge
- Greek: Native Language
- French: Elementary Knowledge

## Awards

- 2014: Michael Clark Prize for Best Electronic Engineering Project – Queen Mary, University of London.

## Publications

- Chourdakis, E.T. & Reiss, J.D. (2017) *Constructing narrative using a generative model and continuous action policies*  
The INLG 2017 Workshop on Computational Creativity in Natural Language Generation
- Chourdakis, E.T. & Reiss, J.D. (2017) *A Machine Learning Approach to Application of Intelligent Artificial Reverberation*  
Journal of the Audio Engineering Society 65.1/2
- Chourdakis, E.T. & Reiss, J.D. (2016) *Automatic Control of a Digital Reverberation Effect using Hybrid Models*  
In Proceedings of the 60<sup>th</sup> Audio Engineering Society Conference: Dereverberation and Reverberation of Audio, Music, and Speech.

## Teaching Experience

- 2015: Marking of final exam scripts for the Digital Signal Processing undergraduate and postgraduate module.  
Lab Assignment teaching assistant (TA) for the Advanced Transform Methods module.
- 2016/17: TA for supporting Matlab-based MSC projects.  
Lab Assignment TA for the Music and Speech Processing postgraduate module.

## Organizing/Volunteering

- 2016 (September): 2nd Workshop on Intelligent Music Production – Chairing of poster session.  
2015 (July): #AudioMusicHackathon – A two days hackathon at Queen Mary University of London sponsored by Harman developer. General Volunteering and food provisions.

## Interests/Skills

Domains of Interest: Machine Learning for Audio and Natural Language Generation; Digital Audio Effects; Sound Synthesis  
 Languages: C; C++; Python; Matlab; Mozart/Oz; Prolog; bash; FAuSt.  
 Toolkits: NumPy; Pandas; Sklearn/HMMLearn; <https://keras.io/Keras>; Essentia.  
 Other: Juce; The Humdrum Music Research Toolkit; GNU and Unix Utilities; Flex; Bison; Emacs Praat, Sonic-Visualiser, L<sup>A</sup>T<sub>E</sub>X.

## Opensource Research Software

SIMSCENE.PY: A collection of tools for synthesizing acoustic scenes in a hierarchical way (2017) using .xls files. It is based on SIMSCENE by M. Lagrange et al. Written in python. <https://code.soundsoftware.ac.uk/projects/simscene-py>  
 SMOOTH-CONVEX-KL-NMF A python library for minibatched smooth and convex Kullback-Leibler (2017) Non-Negative Matrix Factorization based on the paper by Essid, S. and Févotte, C. <https://github.com/mmxgn/smooth-convex-kl-nmf>

## Notable Graduate Projects

Master Degree Thesis: **Intelligent Application of Artificial Reverberation to Multi-track Mixes**  
 Implemented an HMM for controlling an Algorithmic Reverberation Effect. Published in the Proceedings of the 16th Audio Engineering Society Conference on Dereverberation and Reverberation of Audio, Music, and Speech.

Digital Audio Effects: **Multiband Compressor VST**  
 Implementation of a 4-band digital compressor effect, using soft-knee, RMS-detection and automatic estimation of the Gain, as a VST effect using C++ and Juce.

**Monophonic Multi-timbral Subtractive Synthesizer VSTi**  
 Implemented a subtractive synthesizer as a VSTi in C++ with the Juce framework.

Real-Time DSP: **Real-Time Voice Robotisation Effect**  
 Implementing a real-time voice Robotisation effect using a block-by-block implementation of a phase vocoder and controlled by MIDI, in C on the BeagleBoneBlack platform.

Computer Vision: MATLAB implementations of video **scene-change detection**, **object recognition**, and **multiple-object tracking**.

Eng. Diploma thesis: **"Computer-aided (music) composition using Inductive Logic Programming"**  
 Learning of rules in first order predicate calculus using Inductive Logic Programming and existing examples, constructing Constraint Satisfaction Problems and production of pdf sheets and midi files by using the Strasheela music composition system.

Notable Eng. Diploma courseworks: **Digital Audio and Music Processing**  
 Chord Classification and Recognition on "The Beatles" discography using Hidden Markov Models.

**Autonomous Agents**  
 Simple probabilistic model for music cognition.

**Artificial Intelligence**  
 Autonomous software agent that played a variation of Othello.

**Data Base Systems**  
 Database for a virtual electronics computer store.

**Computer Architecture**  
 VHDL Implementation of a simple pipe-lined RISC processor.

**VLSI and ASIC System Design**  
 Designed integrated circuits for an Arithmetic Logic Unit using two metal layers on the Magic VLSI CAD system.

**Theory of Computation**  
 Lexical and Syntax parser for a pascal-based programming language.

## Other Training

- 2016/17: **Chinese for HSK Levels 1, 2** – MOOCs on Coursera by Peking University
- 2014: **Mining Massive Datasets** – MOOC on Coursera by Stanford University.
- 2008: **Embedded Network Systems: Theory and Applications** – One week summer school hosted by the Onassis Foundation.

## Interests/Hobbies

Programming languages;  
Virtual music studio technologies and programming;  
Free(libre) operating systems and software;  
Science fiction films and literature; storytelling.