Emmanouil Theofanis Chourdakis

PhD Candidate at the **Centre for Digital Music**
Thesis: "Computational methods of assisting radio-drama production"
Expected graduation date: December, 2019

Electronic Engineering and Computer Science
Queen Mary University of London
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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, Ward, Paradis, and Reiss (2019, under review) — *Modelling experts' decisions on assigning narrative importances of objects in a radio drama mix*
In Proceedings of the 22nd International Conference of Digital Audio Effects

Chourdakis, E.T. & Reiss, J.D. (2019) — *Tagging and Retrieval of Room Impulse Responses Using Semantic Word Vectors and Perceptual Measures of Reverberation*
In 146th Audio Engineering Society Convention

Chourdakis, E.T. & Reiss, J.D. (2018) — *Grammar Informed Sound Effect Retrieval for Soundscape Generation*
In Proceedings of the DMRN+ 13: Digital Music Research Network One-day Workshop

Chourdakis, E.T. & Reiss, J.D. (2018) — *From my pen to your ears: automatic production of radio plays from unstructured story text*
In Proceedings of the 15th International Sound and Music Computing Conference

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 60th Audio Engineering Society Conference: Dereverberation and Reverberation of Audio, Music, and Speech

Shirley, Ward & Chourdakis (2019, to appear) — *Personalization of Object-based Audio for Accessibility usingNarrative Importance*
ACM International Conference on Interactive Experiences for Television and Online Video, Workshop on In-Programme Personalisation

Academic and Industrial Experience

2018/2019:	Industrial placement at the BBC Research and Development's Audio Team working on automatic mixing for object-based audio.
2019:	PC Member for the Sound And Music Computing 2019 Technical Program (SMC 2019).
2018:	Sub-reviewer for the International Conference on Digital Audio Effects (DAFx 2018).
2016/17:	TA for supporting Matlab-based MSc projects. Lab Assignment TA for the Music and Speech Processing postgraduate module.
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.

Organizing/Volunteering

2019 (March):	AES 146th Pro Audio Convention – Chairing of DSP-1 paper session.
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; Automatic Mixing; Sound Synthesis.
Languages:	C; C++; Python; Matlab; Mozart/Oz; Prolog; bash; FAuSt.
Toolkits:	NumPy; Pandas; Sklearn/HMMLearn; Keras; Essentia.
Other:	Juce; The Humdrum Music Research Toolkit; GNU and Unix Utilities; Flex; Bison; Emacs `Praat`, Sonic-Visualiser, LaTeX.

Opensource Research Software/Tutorials

speech-music-sfx (Author - 2019)	Keras model that discriminates between Speech, Music, and Sound effects. Based on VGGish which is trained on Google's Audioset.
ClausiePy (Author - 2018)	Implementation of Del Corro and Gemulla's Clausie Information Extraction system for Python+Spacy with bindings for Python and Problog.
MiniePy (Author - 2018)	Python wrapper of Gashteovski, Gemulla, and Del Corro's Minie Information extraction system.
SpRL-SpaCy (Author - 2018)	A Spacy model for Spatial Role Labelling with bindings for Python and Problog.
PyOpenAL-HRTF (Author - 2018)	HRTF extensions for Python OpenAL bindings.
Simscene.py: (Author - 2017)	A collection of tools for synthesizing acoustic scenes in a hierarchical way using `.xls` files. It is based on Simscene by M. Lagrange et al. Written in python.
smooth-convex-kl-nmf: (Author - 2017)	A python library for minibatched smooth and convex Kullback-Leibler Non-Negative Matrix Factorization based on the paper by Essid, S. and Févotte, C.
keras-lstm-char-cnn	Tutorial on implementing LSTM-CHAR-CNN by Yoon, K. et al in Keras.

Notable Graduate Projects

Master Degree Thesis:	**Intelligent Application of Artificial Reverberation to Multi-track Mixes** Implemented an HMM for controlling an 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.

Notable Eng.-Dipl Projects

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 MySQL 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

2019:	**Natural Language Processing by** – National Research University Higher School of Economics on Coursera
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.

Extra-curriculum

2011-present:	Engineering member of the Technical Chamber fo Greece.
2012-2013:	Nine month armed service (Greek Army).
	Hardware administration, Archiving, Member of the Honor attributions company.
2008-2011:	Ioannis Manioudakis Music School youth choir.
2007-2011:	Chania Linux User Group.
2003,2010:	Music radio show hosting.

Interests/Hobbies

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