

Emmanouil Theofanis Chourdakis

PHD CANDIDATE OF COMPUTER SCIENCE – ARTIFICIAL INTELLIGENCE / MACHINE LEARNING

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Summary

A **PhD Candidate** at **Queen Mary University of London** who successfully defended on April 1st, 2020 and will be awarded a Doctor's degree once requested amendments are submitted and accepted. Five years of coding experience in academia, and more as a hobbyist. Interested in moving to industry and currently searching for an AI/ML related position.

Skills

Computer Languages	Python, Matlab, R, C, C++, Javascript.
Libraries	NumPy, Pandas, Scikit-Learn, Keras (Tensorflow), Pytorch, XGBoost, SpaCy, NLTK.
Misc	Linux, Git, Docker, Anaconda, \LaTeX .
Human Languages	English (TOEFL, 6+ years in London), Greek (native language).

Industry Experience

BBC Audio R&D

INTERN

London, UK

Dec. 2018 - Apr. 2019

- Developed adaptive audio effects as Web Audio Worklets using Javascript and the Web Audio API for use in an internally developed storyboard system. Developed a variety of scripts that allows rapid prototyping of such effects.
- Developed a Flask-based API for Music Information Retrieval (MIR) using Docker and the Essentia MIR library that did audio content analysis using deep learning to control the aforementioned effects.
- Implemented an object mixing method for hard of hearing listeners as a plugin for VST hosts, as well as Avid Pro Tools using Faust, C++, and Juce.
- Published a peer-reviewed paper on using probabilistic programming and machine learning to automate the mixing process of the above object-based effect.
- Wrote extensive internal guides for building audio effects for the web as well as VST and AAX plugins.

Academic Experience

Queen Mary University of London

PHD CANDIDATE

London, UK

Apr. 2015 -

- Program Committee (PC) Member for the Sound And Music Computing 2019 and 2020 Technical Programs (SMC 2019/2020).
- PC Member for the China Conference on Sound and Music Technology 2018 Technical Program (CSMT 2018).
- Sub-reviewer for the 2018 International Conference on Digital Audio Effects (DAFx 2018).
- Teaching Assistant for supporting Matlab-based MSc final projects.
- Teaching Assistant for the Music and Speech processing and Advanced Transform Methods postgraduate modules.
- Script marking for the Digital Signal Processing module.
- Paper session chair for the Digital Signal Processing technical track of the 146th AES Convention (April 2019, Dublin, Ireland).
- Poster session chair for the 2nd Workshop on Intelligent Music Production (September 2016, London, UK).
- Staff Volunteer for the #AUDIOMUSIC HACKATHON hackday (July 2015, London, UK).

Education

Queen Mary University of London

PHD IN COMPUTER SCIENCE (SUCCESSFULLY DEFENDED – PENDING CORRECTIONS)

London, UK

April 2020

- Thesis titled "Computational Methods for Assisting Radio Drama Production".
- Use of Artificial Intelligence to assist an aspiring radio drama team in producing radio drama.
- Heavily based around Natural Language Processing techniques, and Information Retrieval.

Queen Mary University of London

MSC IN DIGITAL MUSIC PROCESSING (GRADUATED WITH DISTINCTION – 80/100)

London, UK

September 2014

- Thesis project used Machine Learning to understand a song track's audio with the goal to control an audio effect for applying reverberation.
- 2014 Michael Clark Prize for Best Electronic Engineering Project

Technical University of Crete

ELECTRONIC AND COMPUTER ENGINEERING DIPLOMA (GRADUATED WITH MARK "VERY GOOD" – 7.46/10)

Chania, Greece

July 2011

- Thesis project used inductive logic programming to learn musical composition rules from examples to compose similar ones.

Recent Github/Kaggle/Google Play work samples

GENRE-RECOGNITION	A Music Genre Classifier using transfer learning developed with MUSICNN, XGBOOST, and DOCKER.
AUDIO-DAFX2019-AUTOMATIC	Classification of raw audio to Speech, Music, or Sound Effects using KERAS. Modelling of mixing decisions of engineers when mixing for hard-of-hearing listeners.
SPACY-CLAUSIE	A rule-based text information extraction system implemented in SPACY with bindings for PROBLOG.
MINIEPY	Python bindings for the MinIE information extraction system.
SPRL-SPACY	A library for Spatial Role Labelling using SPACY.
PYOPENAL-HRTF	HRTF extensions for the Python OpenAL bindings.
SIMSCENE.PY	Python library and tool for hierarchical construction of acoustical scenes.
SMOOTH-CONVEX-KL-NMF	Python library for minibatched NMF with sparsity and smoothness constraints.
CHARACTER-AWARE-NEURAL-MODELS	A tutorial for step-by-step implementation of Char-LSTM-CNNs in KERAS.
KAGGLE CONNECT X	A NegaMax Kaggle Kernel with $\alpha\beta$ -pruning and memoization.
20 CANDLES	A touchscreen-based puzzle game for Android with procedural level generation written in GODOT.
OTHER	Various contributions to open source software (please ask).

Notable Publications

- E. T. Chourdakis et al. “Modelling Experts’ decisions on assigning narrative importances of objects in a radio drama mix”. In: *22nd International Conference on Digital Audio Effects*. UK, Sept. 2019
- E. T. Chourdakis and J. D. Reiss. “Tagging and Retrieval of Room Impulse Responses Using Semantic Word Vectors and Perceptual Measures of Reverberation”. In: *146th Audio Engineering Society Convention*. Ireland, Mar. 2019
- B. Shirley, L. A. Ward, and E. T. Chourdakis. “Personalization of Object-based Audio for Accessibility using Narrative Importance.” In: *ACM International Conference on Interactive Experiences for Television and Online Video, Workshop on In-Programme Personalisation*. UK, June 2019
- E.T. Chourdakis and J.D. Reiss. “Grammar Informed Sound Effect Retrieval for Soundscape Generation”. In: *DMRN+ 13: Digital Music Research Network*. UK, Dec. 2018
- E. Chourdakis and J.D. Reiss. “From my pen to your ears: automatic production of radio plays from unstructured story text”. In: *15th Sound and Music Computing Conference*. July 2018
- E. T. Chourdakis and J. D. Reiss. “Constructing narrative using a generative model and continuous action policies”. In: *10th INLG Workshop on Computational Creativity in Natural Language Generation*. Sept. 2017
- E. T. Chourdakis and J. D. Reiss. “A Machine-Learning Approach to Application of Intelligent Artificial Reverberation”. In: *Journal of the Audio Engineering Society* 1/2 (Feb. 2017), pp. 56–65
- E. T. Chourdakis and J. D. Reiss. “Automatic Control of a Digital Reverberation Effect using Hybrid Models”. In: *60th Audio Engineering Society Conference on Dereverberation and Reverberation of Audio, Music, and Speech*. Jan. 2016