

NICHOLAS HARLEY, Ph.D.

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ACADEMIC

2019 - Pres Postdoc Artificial Intelligence

Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussels, BE

Member of the AI Lab specialising in Human-Like AI and Computational Creativity

2014 - 2019 PhD Computer Science

Queen Mary University of London, Mile End Road, London, E1 4NS, UK

AHRC scholarship with the Transforming Musicology project specialising in knowledge representation and reasoning for computational musicology.

Thesis *Abstract Representation of Music: A Type-Based Knowledge Representation Framework*: Explored using dependent type theory as a basis for KR languages.

2013 - 2014 MSc Sound and Music Computing

Universitat Pompeu Fabra, Roc Boronat 138, 08018 Barcelona, ES

Covered the core elements of music technology and research including digital signal processing, music information retrieval, machine learning and computational modelling.

Thesis *Evaluation of Set-Class Similarity Measures for Tonal Analysis*: Descriptive modelling of tonality using PC-set theory. Exploring the practical applications of abstract theoretical models within MIR and wider music research.

Courses - Audio and Music Processing - Perception and Cognition - Real-Time Interaction
 - Audio and Music Analysis - Music Recording and Mixing - Research Methodology

2007 - 2011 MEng (Hons 2.1) Electrical and Electronic Engineering

University College London, Gower Street, London, WC1E 6BT, UK

Covered a wide range of fundamental topics through a mixture of theory and practical demonstrations including laboratory work and group coursework.

4th Year Thesis *Passive Surveillance Using Software-Defined Radio*: Employed a cutting edge approach to develop a successful product prototype. Created a platform for future research using emerging technology, specifically the USRP2 from Ettus.

3rd Year Thesis *Advanced-Super-View Pixel Modelling*. Used custom software to simulate the performance of new LCD technologies. Gained experience of data analysis.

Courses - Mathematics - Power Electronics - Advanced Photonics Devices
 - Fields and Waves - Semiconductor Devices
 - OO Programming - Nanotechnology - Radar Systems
 - Electronic Circuits - Optoelectronics - Satellite Communications
 - Circuit Analysis - Optics in Medicine - Marketing Communications
 - Digital Design - Medical Scientific Computing
 - Advanced Digital Design - Corporate Finance

2000 - 2007 390 UCAS Points
King Edward VI School, Kellett Road, Southampton, SO15 7PR, UK

A-Levels Maths (A), Music Technology (A), Physics (B)

AS-Levels Chemistry (B)

11 GCSEs including English (A*) and Maths(A)

TEACHING

2019 - Pres Computational Creativity
Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussels, BE
Teaching assistant; individual project supervision.

2019 - Pres Information Retrieval
Teaching assistant; group problem sessions and individual course project supervision.
Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussels, BE

2019 - Pres Masters Students
Thesis project advisor.
Vrije Universiteit Brussel, Pleinlaan 2, 1050 Brussels, BE

2014 - 2015 Artificial Intelligence Teaching Assistant

MISC ACADEMIC

Nov 2019 Editor of BNAIC post proceedings

2019 Program Committee Chair of BNAIC19

CORE COMPETENCIES & INTERESTS

Scientific Broad theoretical and technical training in areas such as digital signal processing, AI knowledge representation and reasoning, and machine learning.

Computer Experience with a wide variety of languages including Python, Haskell, Java and C. Broad theoretical and practical knowledge of algorithms, data structures and programming language theory.

Music Keen interest in music technology. Violinist and percussionist, actively touring and recording with various groups. Home recording studio engineer and producer.

General Strong analytic capabilities in problem solving and data handling. Organised and cooperative style of working. Rapid further improvement in all areas through independent study and projects.

Languages English (Native), Spanish (Intermediate)