

EDUARDO PIGNATELLI

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EDUCATION

1. **Doctor of Philosophy**
University College London
November 2020 to **present**
London, United Kingdom
Subject: Credit Assignment in Deep Reinforcement Learning
2. **Master of Science in Architecture**
University of Naples Federico II
2015
Naples, Italy
Subject: Architecture and Engineering

EXPERIENCE

1. **Research Assistant**
Imperial College London
September 2019 to November 2020
London, UK
Skills: Python, Jax, Flax, Pytorch, GPU computing, Git, Numerical methods, Predictive modelling.
2. **Machine Learning and Decision Analytics Lead**
BuroHappold Engineering
August 2018 to October 2020
London, UK
Skills: Line management, Risk management, Planning, C#, Python, Deep learning, NoSql, Keras, Pytorch, jupyterhub.
3. **Computational/Machine Learning Engineer**
BuroHappold Engineering
August 2017 to August 2018
London, UK
Skills: Python, Supervised learning, Unsupervised learning, NoSql, Tensorflow, Pytorch, Azure, Cloud computing, Docker, C#, JavaScript, Git, Agile development, SCRUM, UI, UX, MongoDB.
4. **Intern Computational Engineer**
BuroHappold Engineering
April 2017 to August 2017
Bath, UK
Skills: Python, Visual programming, C#, MongoDB.
5. **Architect**
Gianni Ranaulo Design
September 2016 to December 2016.
Dubai, UAE
Skills: Visual Programming, Geometrical modelling, Image processing, Rendering.
6. **Computational Architect**
Gridshell.it
September 2015 to September 2016
Naples, Italy
Skills: Python, Numerical methods, Physics, Differential Equations, Spectral analysis, Acoustical modelling.
7. **Computational Architectural Assistant**
Gridshell.it
July 2014 to September 2015
Naples, Italy
8. **Intern Architect**
CRC – Constructions Restorations and Consolidations
September 2012 to December 2012
Naples, Italy

TEACHING EXPERIENCE

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1. **Teaching consultant**
Imperial College for Sberbank
March 2020 to March 2021
London, UK
Class: **Computer Vision and Image retrieval**
 2. **Teaching Assistant**
University College London
March 2020 to present
London, UK
Classes:
 - **UCL-COMP0089: Reinforcement Learning**
 - **UCL-ELEC0136: Data Acquisition and Processing Systems**
 3. **Teaching Assistant**
University College London Consultants for Defence Science and Technology Laboratory
January 2021 to present
London, UK
Classes:
 - **Machine Learning**
 - **Deep Reinforcement Learning**

PUBLICATIONS

1. Paglieri, D., Piterbarg, U., Coward, S., **Pignatelli, E.**, Foerster, J., Fergus, R., Parker-Holder, J., Rocktäschel, T., 2024. *NetHack Challenge 2.0*. In preparation.
2. **Pignatelli, E.**, Liesen, J., Lange, R.T., Lu, C., Castro, P.S. and Toni, L., 2024. *NAVIX: Scaling MiniGrid Environments with JAX*. arXiv preprint arXiv:2407.19396.
3. **Pignatelli, E.**, Ferret, J., Paglieri, D., Coward, S., Tim Rocktäschel, Edward Grefenstette, Toni, L., 2024. *Assessing the Zero-Shot Capabilities of LLMs for Action Evaluation in RL*. **ICML Workshop on Auto Reinforcement Learning**
4. **Pignatelli, E.**, Ferret, J., Geist, M., Mesnard, T., van Hasselt, H., Toni, L., 2024. *A Survey of Temporal Credit Assignment in Deep Reinforcement Learning*. Accepted at **TMLR**.
5. A. Kayal, **Pignatelli, E.**, Toni, L., 2023. *Does Behavioural Diversity in Intrinsic Rewards help Exploration?*. In **NeurIPS** Second Agent Learning in Open-Endedness Workshop.
6. Ntagiantas, K., **Pignatelli, E.**, Peters, N. S., Cantwell, C. D., Chowdhury, R. A., Bharath, A. A., 2023. *Estimation of Fibre Architecture and Scar in Myocardial Tissue Using Electrograms: an in-silico study*. In **Biomedical Signal Processing and Control**.
7. Wong N, Meshkinfamard S, Turbé V, Whitaker M, Moshe M, Bardanzellu A, Dai T., **Pignatelli E.**, Barclay W, Darzi A, Elliott P, Ward H, Tanaka R, Cooke G, McKendry R, Atchison C., Bharath A., 2022. *Machine learning to support visual auditing of home-based lateral flow immunoassay self-test results for SARS-CoV-2 antibodies*. **Communications Medicine. Nature Research**.
8. Lino, M., Cantwell, C., Fotiadis, S., **Pignatelli, E.**, Bharath, A., 2020. *Simulating Surface Wave Dynamics with Convolutional Networks*. In **NeurIPS** workshop on Interpretable Inductive Biases and Physically Structured Learning.
9. Fotiadis, S., **Pignatelli, E.**, Valencia, M.L., Cantwell, C., Storkey, A., Bharath, A.A., 2020. *Comparing recurrent and convolutional neural networks for predicting wave propagation*. In **ICLR Workshop on Deep Neural Models and Differential Equations**.
10. Di Rosario, **S.**, **Pignatelli, E.** and Mirra, G., 2018, May. *An automated design methodology for acoustic shells in outdoor concerts*. In *Proceedings of the EuroNoise* (Vol. 2018, pp. 2123-2130).
11. **Pignatelli, E.**, Mirra, G. and Pone, S., 2017, September. *InFormer: designing forming actions in post-formed gridshells by means of Multi-Objective Genetic Algorithms*. In *Proceedings of IASS Annual Symposia* (Vol. 2017, No. 17, pp. 1-10). International Association for Shell and Spatial Structures (IASS).
12. **Pignatelli, E.**, Mirra, G. and Pone, S., 2016, September. *Computational morphogenesis and construction of an acoustic shell for outdoor chamber music*. In *Proceedings of IASS Annual Symposia* (Vol. 2016, No. 17, pp. 1-10). International Association for Shell and Spatial Structures (IASS).
13. Pone, S., Mirra, G., **Pignatelli, E.**, Lancia, D. and Colabella, S., 2016, October. *Specialised algorithms for different project stages in a post-formed timber gridshell design*. In *Proceedings of the 3rd International Conference on Structures and Architecture (ICSA)* (pp. 259-266).
14. Di Rosario, S., Parenti, B., **Pignatelli, E.**, Mirra, G., Pone, S., 2015, October. *Res, Resonant String Shell, development and design of an acoustic shell for outdoor chamber music concerts*. In *Proceedings of the Institute of Acoustics* (Vol. 37, pp. 354-373). 9th International Conference on Auditorium Acoustics.
15. **Pignatelli, E.**, Colabella, S., Rosario, S.D. and Pone, S., 2015, August. *A wooden acoustic shell for open-air chamber music concert*. In *Proceedings of IASS Annual Symposia* (Vol. 2015, No. 25, pp. 1-12). International Association for Shell and Spatial Structures (IASS).

AWARDS AND SCHOLARSHIPS

1. **UK Research and Innovation Studentship**
2. **Best Innovation 2020 – Society of Digital Engineering**
3. **Peter Lord Award**
4. **Honorary Fellowship: Authority in the subject (Cultore della Materia)**
5. **Essence of Buro Happold Award**
6. **M.A.R Scholarship – <https://www.vpmusica.com/>**