

Antreas Antoniou

Resume

Informatics Forum
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<https://antreasantoniou.github.io>

Education

- 2017–2020 **PhD in Machine Learning**, *The University of Edinburgh*.
- 2016–2017 **MScR in Data Science**, *The University of Edinburgh*, Distinction 74.4%.
- 2014–2015 **MSc in Data Science**, *Lancaster University*, Distinction 79.3%.
- 2011–2014 **BEng in Computer Systems Engineering**, *Lancaster University*, Strong Upper Second 16.6/24.
Approximately equivalent to a US GPA of 3.7

Research Projects

- 2017–2020 **PhD Overall Project**, *Learning to Learn at Inference Time*, Currently consists of [3, 2, 1].
- 2017 **MScR Thesis**, *Data Augmentation Generative Adversarial Networks*, [6, 7].
- 2014 **BEng Dissertation**, *Fault Tolerant, Self Monitoring Sensors*, Researched a professional-grade sensing system capable of self-validating its own functionality by using signal injection techniques. Further, the system could compensate for any low-level faults as well as predict future faults hours in advance.

Employment

- 2016 **Speech-Scientist Intern**, *Amazon*, Worked on improving and extending the capabilities of Amazon Echo.
- 2015 **Research Associate**, *Lancaster University*, I was a research associate in the Deep Online Cognition project in which a new component-based programming language, called DANA was used to create modular software that can self-adapt to changing states.
- 2014 **Embedded Systems Research Intern**, *Lancaster University*, I was handpicked by one of my professors to design, build and program new hardware for Blackpool Illuminations. The project involved driving LEDs using pulse width modulation (PWM) and pumps using a technique we researched that allows for high voltage frequency control.
- 2013 **Software Developer Intern**, *Lancaster University*, Design and implementation of Android app that enabled interaction between presenter and audience in real-time.

Awards and Nominations

- 2019 5 Teaching Award Nominations on Best Practice in Inclusive Learning Award, Best Support Staff Award, 2 x Best Student Who Tutors Award and Best UK PhD Tutor Award
- 2019 Nominated in the UK Open Source Awards for my MAML++ framework¹. I was in the top-3 finalists.
- 2018 Nominated for the Best Student Who Tutors Award
- 2015 The IBM Prize for Best Data Science Dissertation
- 2014 MSc Data Science Scholarship
- 2014 2nd Place in Lancaster University CS Hackathon 2014 competition

Programming Languages and Deep Learning Frameworks

Intermediate C/C++, HTML, L^AT_EX, ASSEMBLY
Advanced PYTHON, JAVA
Advanced PYTORCH, TENSORFLOW, KERAS, CHAINER

Skills

Deep Learning

Development, *Very experienced in designing, implementing, debugging and tuning a large variety of end-to-end differentiable systems, a subset of which include 1) meta-learning systems such as MAML, 2) GANs of all varieties, such as image-conditional GANs used for image translation, super-resolution, in-filling, domain-transfer, 3) classifiers incorporating any of the modern architecture building blocks, 4) adversarial attacks and defences, 5) state of the art machine translation systems utilizing LSTMs and transformers 6) Multi-sample, multi-parameter-set layers (<https://github.com/pytorch/pytorch/issues/17983>).*

Research, *Experienced deep learning researcher with a focus on meta-learning. I like to draw insights by actively working on different deep learning subfields, and then leveraging my across-task insights on task-specific projects. I have conducted/collaborated research on well over 40 separate projects in different subfields of deep learning. I have supervised 14 student groups working on deep learning projects, 2 of which were finalists in the yearly MLP course competition for the IBM prize.*

Engineering

General Engineering Skills, *Control and Systems Engineering, Engineering Mathematics.*

Electronics Engineering Skills, *Digital Electronics Engineering, Advanced Electronics Theory Knowledge, Signal Processing, Hardware Design, Integrated Circuit Engineering.*

Software Engineering Skills, *Distributed Systems Development: Java RMI, JGroups, P2P, ReST, LoST, ChordNodes, Networks Programming Knowledge and Experience.*

Embedded Systems Engineering, *Experience programming low level platforms such as Arduino, Raspberry Pi, PIC micro-controllers, ARM based micro-controllers and Android.*

Operating Systems, *Windows 7, Windows 8, Windows 10, Ubuntu Linux, Mac OS, Unix.*

Languages

English **Proficient**
Greek **Native**
Japanese **Basic** *Passive usage mostly, picked up from watching 550+ Anime shows*

Teaching

Sept. 2017 to Current **Machine Learning Practical Course**, *Teaching Assistant, Group Tutor (Effectively Research Supervisor), Demonstrator and Piazza Instructor, Full Description at <https://antreasantoniou.github.io/teaching/>.*

Apr. 2015 to May 2015 **Digital Innovation**, *Teaching Assistant.*

Publications

Antreas Antoniou and Amos Storkey. Learning to Learn by Self-Critique. *Advances in Neural Information Processing Systems*, 2019.

Antreas Antoniou and Amos Storkey. Assume, Augment and Learn: Unsupervised Few-Shot Meta-Learning via Random Labels and Data Augmentation. *arXiv preprint arXiv:1902.09884*, 2019.

Antreas Antoniou, Harrison Edwards, and Amos Storkey. How to train your MAML. *Proceedings of the 7th International Conference on Learning Representations (ICLR)*, 2018.

Antreas Antoniou, Agnieszka Słowik, Elliot J Crowley, and Amos Storkey. Dilated DenseNets for Relational Reasoning. *arXiv preprint arXiv:1811.00410*, 2018.

Luke N Darlow, Elliot J Crowley, Antreas Antoniou, and Amos J Storkey. CINIC-10 Is Not Imagenet or CIFAR-10. *arXiv preprint arXiv:1810.03505*, 2018.

Antreas Antoniou, Amos Storkey, and Harrison Edwards. Augmenting Image Classifiers Using Data Augmentation Generative Adversarial Networks. In *Artificial Neural Networks and Machine Learning – ICANN 2018*. Springer International Publishing, 2018.

Antreas Antoniou, Amos Storkey, and Harrison Edwards. Data Augmentation Generative Adversarial Networks. *arXiv preprint arXiv:1711.04340*, 2017.

Antreas Antoniou and Plamen Angelov. A general purpose intelligent surveillance system for mobile devices using deep learning. In *2016 International Joint Conference on Neural Networks (IJCNN)*, pages 2879–2886. IEEE, 2016.