

Antreas Antoniou

Resume

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📄 <https://antreasantoniou.github.io>

Education

- 2017–2021 **PhD in Machine Learning**, *The University of Edinburgh*, Viva passed, final submission ready.
- 2016–2017 **MScR in Data Science**, *The University of Edinburgh*.
- 2014–2015 **MSc in Data Science**, *Lancaster University*.
- 2011–2014 **BEng in Computer Systems Engineering**, *Lancaster University*.

Research Projects

- 2021–Current **Towards Better Deep Learning Benchmarks and Tasks - Multi Modal Training to the Rescue**, *A multi legged project being undertaken during my time as a Research Associate*.
- 2017–2021 **PhD Thesis**, *Meta-Learning for Supervised and Unsupervised Few-Shot Learning*, Consisting of [6, 3, 4], Click for draft.
- 2017 **MScR Thesis**, *Data Augmentation Generative Adversarial Networks*, [7, 10].
- 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

- 2021–Current **Research Associate on Data-Efficient, Highly Transferable and Robust Generalization Learning**, *University of Edinburgh*.
- 2020–2021 **Research Intern on Few-Shot Learning**, *Google*, Worked on improving the transferability of Google's few-shot learning systems on extreme domain shift.
- 2017–2020 **Machine Learning Practical Lead Teaching Assistant, Group Tutor, Demonstrator and Piazza Instructor**, *University of Edinburgh*, Full Description at <https://antreasantoniou.github.io/teaching/>.
- 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

- 2020-2021 Staff Award for being the TA MLP - Full details at https://antreasantoniou.metalearnit.ai/staff_awards/
- 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 - Full details at https://antreasantoniou.metalearnit.ai/teaching_awards
- 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, \LaTeX , 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 60 separate projects in different subfields of deep learning. I have supervised 52 student groups working on deep learning projects, 3 of which were finalists (top-2 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 **Machine Learning Practical Course**, *Teaching Assistant, Group Tutor (Effectively Research Supervisor), Demonstrator and Piazza Instructor*, Full Description at <https://antreasantoniou.github.io/teaching/>.
Current

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

References

- [1] Antreas Antoniou et al. "Defining Benchmarks for Continual Few-Shot Learning". In: *arXiv e-prints arXiv:2004.11967* (2020).
- [2] Timothy Hospedales et al. "Meta-Learning in Neural Networks: A Survey". In: *arXiv e-prints arXiv:2004.05439* (2020).
- [3] Antreas Antoniou and Amos Storkey. "Assume, Augment and Learn: Unsupervised Few-Shot Meta-Learning via Random Labels and Data Augmentation". In: *arXiv e-prints arXiv:1902.09884* (2019).
- [4] Antreas Antoniou and Amos J Storkey. "Learning to Learn by Self-Critique". In: *Advances in Neural Information Processing Systems*. 2019.
- [5] Antreas Antoniou et al. "Meta-meta-learning for Neural Architecture Search through arXiv Descent". In: *SIGBOVIK* (2019).
- [6] Antreas Antoniou, Harrison Edwards, and Amos Storkey. "How to train your MAML". In: *International Conference on Learning Representations 2019*. 2018.
- [7] Antreas Antoniou, Amos Storkey, and Harrison Edwards. "Augmenting image classifiers using data augmentation generative adversarial networks". In: *International Conference on Artificial Neural Networks*. 2018.
- [8] Antreas Antoniou et al. "Dilated Densenets for Relational Reasoning". In: *arXiv e-prints arXiv:1811.00410* (2018).
- [9] Luke N Darlow et al. "CINIC-10 is not ImageNet or CIFAR-10". In: *arXiv e-prints arXiv:1810.03505* (2018).
- [10] Antreas Antoniou, Amos Storkey, and Harrison Edwards. "Data Augmentation Generative Adversarial Networks". In: *arXiv e-prints arXiv:1711.04340* (2017).
- [11] 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)*. IEEE. 2016, pp. 2879–2886.