Antreas Antoniou

Resume

Informatics Forum
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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++ framework[1]. 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

Teaching and Research Grants

2017-2020 Teaching Compute Grant - Managed the efficient and effective management of the GCP compute grant for the MLP course

2021 TRC Grant from Google - Applied for and granted compute grant in the form of access to 5 on-demand Cloud TPU v3 devices, 5 on-demand Cloud TPU v2 devices, and 100 preemptible Cloud TPU v2 devices for one month

2021 Google Compute Platform Research Credit Award - Applied for and awarded $13K worth of GCP compute for research

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 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.*

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.