

## Arslan Chaudhry

### Contact Information

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### Education

**PhD, University of Oxford**, United Kingdom

**Oct 2016 - December 2020**

- **Area:** Machine Learning and Computer Vision
- **Advisor:** Philip H.S. Torr
- **Thesis:** Continual Learning in Neural Networks
- Studied on the Rhodes Scholarship.

**BSc, University of Engineering & Technology**, Lahore

**Sep 2009 - Aug 2013**

- **Area:** Electrical Engineering
  - **CGPA:** 3.95/4.0 (Rank: 1/ 400+; Medalist)
  - **Thesis:** Load balancing of compute intensive applications on Beowulf clusters
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### Experience

**Research Intern**, Google Research

**June 2020 - September 2020**

- *Hosts:* Srikumar Ramalingam, Andreas Veit

**Research Intern**, Facebook AI

**June 2019 - September 2019**

- *Hosts:* Albert Gordo, David Lopez-Paz
- *Project:* Experience Replay for Continual Learning

**Research Intern**, Facebook AI Research

**June 2018 - February 2019**

- *Hosts:* Mohamed Elhoseiny, Marcus Rohrbach, Marc'aurelio Ranzato
- *Project:* Efficient Lifelong Learning.

**Software Developer**, Mentor Graphics

**June 2013 - Aug 2016**

- Developed a Virtual Machine Monitor (VMM)/ Hypervisor for ARM and Intel platforms. Lead the development of:
  - Secured (using TrustZone – ARM) and virtualized (VT-x/ VT-d – Intel) Memory Management Unit (MMU)
  - Networking and console drivers based on virt-IO
  - Profiling and visualization toolkit
  - Build/ configure and packaging system
  - Received multiple performance excellence awards

## Publications

1. **Arslan Chaudhry**, Albert Gordo, David Lopez-Paz, Puneet K. Dokania, Philip H. S. Torr, *Using Hindsight to Anchor Past Knowledge in Continual Learning*, Association for the Advancement of Artificial Intelligence (AAAI), 2021
  2. **Arslan Chaudhry**, Naeemullah Khan, Puneet Dokania, Philip Torr, *Continual Learning in Low-rank Orthogonal Subspaces*, Neural Information Processing Systems (NeurIPS), 2020
  3. **Arslan Chaudhry**, Marcus Rohrbach, Mohamed Elhoseiny, Thalaiyasingam Ajanthan, Puneet K. Dokania, Philip H.S. Torr, Marc'Aurelio Ranzato; *Continual Learning with Tiny Episodic Memories*, International Conference on Machine Learning (ICML), MTLRL Workshop, 2019
  4. **Arslan Chaudhry**, MarcAurelio Ranzato, Marcus Rohrbach, Mohamed Elhoseiny; *Efficient Lifelong Learning with A-GEM*, International Conference on Learning Representations (ICLR), 2019
  5. **Arslan Chaudhry**, Puneet K. Dokania, Thalaiyasingam Ajanthan, Philip Torr; *Riemannian Walk for Incremental Learning: Understanding Forgetting and Intertransigence*, In the Proceedings of the European Conference on Computer Vision (ECCV), 2018
  6. **Arslan Chaudhry**, Puneet K. Dokania, Philip Torr; *Discovering Class-Specific Pixels for Weakly-Supervised Semantic Segmentation*, In the Proceedings of the British Machine Vision Conference (BMVC), 2017 (**oral**)
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## Teaching

Tutorials, **Machine Learning**, Hilary 2020, Trinity 2018, Stanford House (Oxford)  
Tutorials, **Networking**, Trinity [2018, 2019] University of Oxford  
Tutorials, **Operating Systems**, Hilary [2018, 2019], University of Oxford  
Lab, **Software Engineering**, Hilary [2017, 2018, 2019], University of Oxford  
Teaching Assistant, **Operating Systems**, Spring 2013, UET, Lahore

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## Talks

- **KAUST**, Continual Learning in Deep Neural Networks, July 2020
  - **Google Research**, Continual Learning in Deep Neural Networks, July 2020
  - **Google DeepMind**, Continual Learning in Deep Neural Networks, April 2020
  - **UET Lahore**, Machine Learning Introduction, December 2017
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## Computing Expertise

<b>Languages:</b>	Python, C, C++
<b>Programming Paradigms:</b>	Linux Kernel and Driver Development, Parallel Programming, CUDA Programming
<b>Machine Learning Frameworks:</b>	Tensorflow, Pytorch
<b>Embedded Systems:</b>	ARM TrustZone, Intel's VT-d and VT-x

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**Awards**  
**Grants**  
**Fellowships**

Amazon Research Award, **2019-2020**  
NeurIPS Travel Award, **2019**  
ICLR Travel Award, **2018**  
Murray Speight Grant, Rhodes House, **2018**  
Rhodes Scholar, **2016**  
Performance Excellence Award, Virtualization Team, Mentor Graphics ESD, **2015**  
Topper and Gold medalist of Electrical Engineering Department, UET Lahore, **2013**  
Deans Honors List, UET Lahore, **2009-2013**  
Nominated for IEEE Region 10 executive comity by IEEE Lahore Section, **2013**  
Obtained third position in BLOSSOM held by MIT officials at PYF, **2012**  
Winner of Race to Innovation in Pakistan Student Congress, **2012**  
Obtained third position in Pakistan in IEEE Xtreme Programming Competition, **2012**  
PCS scholarship recipient worth PKR 113980, **2007-2009**

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**Service**

Reviewer for ICML [2019-2020], NeurIPS [2019-2020], ICLR [2021], CVPR [2019-2020], ICCV [2019], ECCV[2020]  
Reviewer for TPAMI, JMLR, IEEE Transaction on Multimedia