

Arsany Guirguis

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EDUCATION	<i>Ph.D., Computer Science,</i> EPFL, Switzerland. Thesis: System Support for Robust Distributed Learning. Adviser: Prof. Rachid Guerraoui.	September 2017 - July 2022
	<i>M.Sc., Computer and Systems Engineering,</i> Alexandria University, Egypt. GPA: 4.00/4.00. Thesis: Cooperation-based Routing Protocol for Cognitive Radio Networks. Adviser: Prof. Mustafa ElNainay.	September 2014 - February 2017
	<i>B.Sc., Computer and Systems Engineering,</i> Alexandria University, Egypt. Rank: First , Distinction with degree of honor. GPA: 3.97/4.00. Graduation Project: BARDI: A Real Interactive Board. Adviser: Prof. Mohamed Hussein.	September 2009 - June 2014
EXPERIENCE	Bloomberg LP , London, UK <i>Senior Research Scientist</i>	March 2023 - Now
	Meta , London, United Kingdom <i>Software Engineer</i>	October 2022 - February 2023
	Bloomberg LP , London, UK <i>Data Science Research Intern</i>	May 2021 - August 2021
	<ul style="list-style-type: none">Designed and built an elastic resource allocator for multi-tenant deep learning clusters.	
	Huawei Technologies Research Center , Munich, Germany <i>Ph.D. Visiting Researcher</i>	February 2021 - April 2021
	<ul style="list-style-type: none">Explored the benefits of near data processing (NDP) for machine learning applications.	
	INRIA , Rennes, France <i>Visiting Scholar</i>	July 2019 - September 2019
	<ul style="list-style-type: none">Designed and built a scalable system for distributed Generative Adversarial Networks.	
	Alexandria University , Alexandria, Egypt <i>Research Assistant</i>	August 2014 - May 2017
	<ul style="list-style-type: none">Designed and implemented open-access testbed for Cognitive Radio Networks	

to be available for educational and research purposes.

- Designed and implemented new routing protocols for Cognitive Networks.

Egypt-Japan University of Science and Technology, Alexandria, Egypt
Undergraduate Research Assistant July 2013 - September 2013

- Designed and implemented a network coding flavored forwarding algorithm for Cognitive Radio Networks. This work was published in GLOBECOM 2014.

Egypt-Japan University of Science and Technology, Alexandria, Egypt
Undergraduate Research Assistant July 2012 - September 2012

- Implemented a routing protocol (SEARCH) for Cognitive Radio Networks over Click Modular Router. This work was a part of the CogFrame project.

CONFERENCE PAPERS

1. **Arsany Guirguis**, Yitzchak Lockerman, Chengjian Zheng, David Eis, Rachid Guerraoui, “Elastic Resource Allocation for Multi-tenant Deep Learning” Clusters, Under submission.
2. **Arsany Guirguis**, Diana Petrescu, Florin Dinu, Do Le Quoc, Javier Picorel, Rachid Guerraoui, “Accelerating Transfer Learning with Cloud Object Stores”, Under submission.
3. El Mahdi El Mhamdi*, Sadegh Farhadkhani, Rachid Guerraoui, **Arsany Guirguis**, Lê Nguyễn Hoàng, and Sébastien Rouault, “Collaborative Learning in the Jungle”, Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS) 2021.
4. Rachid Guerraoui*, **Arsany Guirguis**, Jérémy Plassmann, Anton Ragot, and Sébastien Rouault, “Garfield: System Support for Byzantine Machine Learning”, IEEE/IFIP International Conference on Dependable Systems and Networks (DSN) 2021. **Acceptance rate 16.3%**.
5. Rachid Guerraoui*, **Arsany Guirguis**, Anne-Marie Kermarrec, and Erwan Le Merrer, “FeGAN: Scaling Distributed GANs”, ACM/IFIP International Middleware Conference (Middleware) 2020.
6. El Mahdi El Mhamdi*, Rachid Guerraoui, **Arsany Guirguis**, Lê Nguyễn Hoàng, and Sébastien Rouault, “Genuinely Distributed Byzantine Machine Learning”, ACM Symposium on Principles of Distributed Computing (PODC) 2020. **[Invited to the International Journal Distributed Computing]**.
7. Georgios Damaskinos*, El Mahdi El Mhamdi, Rachid Guerraoui, **Arsany Guirguis**, and Sébastien Rouault, “AGGREGATHOR: Byzantine Machine Learning via Robust Gradient Aggregation”, The Conference on Systems and Machine Learning (MLSys/SysML) 2019. **Acceptance rate 16.9%**.
8. **Arsany Guirguis**, Mustafa El-Nainay, “Channel Selection Scheme for Cooperative Routing Protocols in Cognitive Radio Networks”, IEEE ICNC 2017.
9. Samer S. Hanna, **Arsany Guirguis**, Mahmoud A. Mahdi, Yaser A. El-Nakieb, Mahmoud Alaa Eldin, Dina M. Saber, Moustafa Youssef, Mustafa Y. ElNainay, Amr A. El-Sherif, and Karim G. Seddik, “CRC: Collaborative Research and Teaching Testbed for Wireless Communications and Networks”, ACM WiNTECH 2016 in conjunction with ACM MobiCom 2016.

*Authors are listed alphabetically.

10. **Arsany Guirguis**, Mohamed Ibrahim, Karim Seddik, Khaled Harras, Fadel Digham, and Moustafa Youssef, “Primary User Aware k-hop Routing for Cognitive Radio Networks”, IEEE GLOBECOM 2015.
11. **Arsany Guirguis**, Raymond Guirguis, and Moustafa Youssef, “Primary User Aware Network Coding for Multi-hop Cognitive Radio Networks”, IEEE GLOBECOM 2014.

JOURNAL PAPERS

1. El Mahdi El Mhamdi*, Rachid Guerraoui, **Arsany Guirguis**, Lê Nguyễn Hoang, and Sébastien Rouault, “Genuinely Distributed Byzantine Machine Learning (extended version)”, Distributed Computing, 2022.
2. **Arsany Guirguis**, Fadel Digham, Karim Seddik, Mohamed Ibrahim, Khaled Harras, and Moustafa Youssef, “Primary User-aware Optimal Discovery Routing for Cognitive Radio Networks”, IEEE Transactions on Mobile Computing (TMC), 2018.
3. **Arsany Guirguis**, Mohammed Karmoose, Karim Habak, Mustafa ElNainay, and Moustafa Youssef, “Cooperation-based Routing in Cognitive Radio Networks”, Elsevier Journal of Network and Computer Applications (JNCA), 2018.
4. Youssef Khazbak, Mostafa Izz, Tamer ElBatt, Abdulrahman Fahim, **Arsany Guirguis**, and Moustafa Youssef, “Cost-Effective Data Transfer for Mobile Healthcare”, IEEE Systems Journal, 2016.

INVITED TALKS

1. System Support for Robust Machine Learning, KAUST, June 2022. Saudi Arabia.
2. Robust Machine Learning in the Jungle, Amazon ATS Tech Talk, March 2022. Amazon, Luxembourg.
3. Byzantine Machine Learning, Workshop on Systems (WOS9), December 2019. Inria Rennes.

HONORS AND AWARDS

1. **EPFL, Switzerland**: EDIC fellowship, September 2017.
2. **Alexandria University, Egypt**: University fund winner to attend IEEE ICNC 2017.
3. **Alexandria University, Egypt**: runner-up, outstanding teaching assistant in Computer and Systems Engineering Department, April 2016.
4. **Alexandria University, Egypt**: Prof. Khalil award, August 2014 (for ranking first on Computer and Systems Engineering Department).
5. **Alexandria University, Egypt**: Best Graduation Project award, July 2014.
6. **Microsoft Research Advanced Technology Lab, Cairo, Egypt**: Graduation Project fund winner, December 2013.

TECHNICAL SKILLS

- **Languages**: Python, Java, C/C++, P4.
- **Frameworks**: PyTorch, TensorFlow, Kubernetes, OpenStack Swift.

**PROFESSIONAL
SERVICES**

- Reviewer for ICLR 2022 (**Highlighted Reviewer**), NeurIPS 2022.
- Artifact Evaluation Board member at the Journal of Systems Research 2021.
- Reviewer for IEEE Transactions on Parallel and Distributed Systems.
- Reviewer for IEEE Transactions on Dependable and Secure Computing.
- Reviewer for IEEE Systems Journal.
- Reviewer for Elsevier Computer Standards & Interfaces.
- Reviewer for IEEE Transactions on Vehicular Technology.
- Reviewer for IEEE International Wireless Communications and Mobile Computing Conference.
- Reviewer for IEEE Communications Letters.