ENZO TARTAGLIONE

BIO

Enzo Tartaglione is Maître de Conférénces at Télécom Paris, he is Hi!Paris chair holder, member of the ELLIS society, and Associate Editor of IEEE Transactions on Neural Networks and Learning Systems. He received the MS in Electronic Engineering at Politecnico di Torino in 2015, cum laude. The same year, he also received a magna cum laude MS in electrical and computer engineering at the University of Illinois at Chicago. In 2016 he was also awarded the MS in Electronics by Politecnico di Milano, cum laude. In 2019 he obtained a Ph.D. in Physics at Politecnico di Torino, cum laude, with the thesis "From Statistical Physics to Algorithms in Deep Neural Systems". His principal interests include compression, sparsification, pruning, and watermarking of deep neural networks, computer vision, deep learning for medical imaging, privacy-aware learning, data debiasing, and regularization for deep learning. His expertise mainly focuses on the themes of efficient deep learning, with articles published in top conferences and journals in the field.

ACADEMIC APPOINTMENTS

Télécom Paris, Institut Polytechnique de Paris, France **Oct 2021 - Now**
https://www.ip-paris.fr/

- Assistant Professor in Deep Learning and Efficient AI. Oct 2021 - Now
  Member of the Information Processing and Communications Laboratory (LTCI), Multimedia Team.
- Hi!Paris Society chair holder Oct 2021 - Sep 2024

Università degli Studi di Torino, Torino, Italy **Jan 2019 - Sep 2021**

- Post-Doctorate in Computer Vision and Pattern Recognition. Mar 2019 - Sep 2021
- Internship in Compression for Computer Vision Models. Jan 2019 - Feb 2019

EDUCATION

Ph.D. in Physics (cum laude) Nov 2015 - Jul 2019
Politecnico di Torino, Turin, Italy
Thesis: *From Statistical Physics to Algorithms in Deep Neural Systems*

M.Sc. Electronic Engineering (score: 110/110 cum laude) Jan 2014 - Dec 2016
Politecnico di Milano, Milan, Italy

M.Sc. Electrical and Computer Engineering (GPA: 3.87, magna cum laude) Jan 2014 - Aug 2015
University of Illinois at Chicago, Chicago, the USA

M.Sc. Embedded Systems (score: 110/110 cum laude) Sep 2013 - Jul 2015
Politecnico di Torino, Torino, Italy

EDITORIAL ACTIVITY

Associate Editor for IEEE Transactions of Neural Networks and Learning Systems 2024 - Now

MEMBERSHIPS

IEEE Senior Member 2019 - Now
ELLIS Society Member 2023 - Now
International Association for Pattern Recognition (IAPR) Member 2021 - Now

SELECTED PUBLICATIONS

- Quétu, V., & **Tartaglione, E.** (2024). DSD^2: can we Dodge Sparse Double Descent and compress the neural network worry-free? Proceedings of the AAAI Conference on Artificial Intelligence (AAAI).
- De Sousa Trias, C., Mitrea, M., Fiandrotti, A., Cagnazzo, M., Chaudhuri, S., & **Tartaglione, E.** (2024). Find the lady: permutation and re-synchronization of deep neural networks. Proceedings of the AAAI Conference on Artificial Intelligence (AAAI).
- Nahon, R., Nguyen, V. T., & **Tartaglione, E.** (2023). Mining bias-target Alignment from Voronoi Cells. IEEE International Conference on Computer Vision (ICCV).
- Laurent, O., Lafage, A., **Tartaglione, E.**, Daniel, G., Martinez, J. M., Bursuc, A., & Franchi, G. (2023). Packed-Ensembles for Efficient Uncertainty Estimation. In International Conference on Learning Representations (**Spotlight paper**, ICLR).
- Barbano, C. A., Dufumier, B., **Tartaglione, E.**, Grangetto, M., & Gori, P. (2023). Unbiased Supervised Contrastive Learning (ICLR).
- **Tartaglione, E.**, Gennari, F., Quétu, V., & Grangetto, M. (2023). Disentangling private classes through regularization. Neurocomputing.
- Deng, C. L., & **Tartaglione, E.** (2023). Compressing explicit voxel grid representations: fast nerfs become also small. In Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision.
- Bragagnolo, A., **Tartaglione, E.**, & Grangetto, M. (2022). To update or not to update? Neurons at equilibrium in deep models. Advances in Neural Information Processing Systems, 35 (NeurIPS).
- **Tartaglione, E.**, Bragagnolo, A., Fiandrotti, A., & Grangetto, M. (2022). Loss-based sensitivity regularization: towards deep sparse neural networks. Neural Networks, 146.
- **Tartaglione, E.**, Lathuilière, S., Fiandrotti, A., Cagnazzo, M., & Grangetto, M. (2021). HEMP: High-order entropy minimization for neural network compression. Neurocomputing, 461.
- **Tartaglione, E.**, Bragagnolo, A., Odierna, F., Fiandrotti, A., & Grangetto, M. (2021). Serene: Sensitivity-based regularization of neurons for structured sparsity in neural networks. IEEE Transactions on Neural Networks and Learning Systems, 33(12).
- **Tartaglione, E.**, Barbano, C. A., & Grangetto, M. (2021). End: Entangling and disentangling deep representations for bias correction. In Proceedings of the IEEE/CVF conference on computer vision and pattern recognition (CVPR).
- **Tartaglione, E.**, Lepsøy, S., Fiandrotti, A., & Francini, G. (2018). Learning sparse neural networks via sensitivity-driven regularization. Advances in neural information processing systems, 31 (NeurIPS).
- Baldassi, C., Gerace, F., Kappen, H. J., Lucibello, C., Saglietti, L., **Tartaglione, E.**, & Zecchina, R. (2018). Role of synaptic stochasticity in training low-precision neural networks. Physical review letters, 120(26).

PATENTS

- Presta, A., Fiandrotti, A., **Tartaglione, E.**, & Grangetto, M. Method for learned image compression and related autoencoder (2023). Italian patent application No. 102023000018537
- **Tartaglione, E.**, Grangetto, M., Odierna, F., Bragagnolo, A., & Fiandrotti, A. Method and apparatus for pruning neural networks (2022). U.S. Patent Application No. 17/769,707.
- Fiandrotti, A., Francini, G., Lepsoy, S., & **Tartaglione, E.** Neural networks having reduced number of parameters (2021). U.S. Patent Application No. 17/251,508.

GRANTS AND FUNDING SOURCES

- Agence Nationale de la Recherche (ANR) Project SODA *"System On Chip Design leveraging Artificial Intelligence"*. **Role**: Team Member. 2023 - 2027
- European Project ELIAS *"European Lighthouse of AI for Sustainability"*. **Role**: Task leader for *"Reducing Energy Requirements of Computation"*. EU grant n. 101120237. 2023 - 2027
- Hi!Paris collaboration project *"Bayesian neural networks with Attention and Pruning towards Efficiency"*. **Role**: Co-PI. 2022 - 2023
- European project *"DeepHealth"* **Role**: Collaborator. EU grant n. 825111. 2019-2022

AWARDS

- Caianiello best paper award of the International Conference on Image Analysis and Processing, 2023
  Sparse Double Descent in Vision Transformers: real or phantom threat?
- Outstanding reviewer award, CVPR. 2021
  https://cvpr2021.thecvf.com/node/184
- Winner of the prize "Ermanno Borio" for the best Master thesis in Electronic Engineering 2016

ORGANIZING COMMITTEE

- Workshop co-organizer "Fairness and ethics towards transparent AI: facing the chalLEnge through model Debiasing (FAILED)" at the European Conference on Computer Vision (ECCV). 2024
  https://failed-workshop-eccv-2024.github.io/
- Workshop co-organizer "Workshop on Green Foundation Models" at the European Conference on Computer Vision (ECCV). 2024
  https://green-fomo.github.io/ECCV2024/index.html
- Workshop organizing chair "Simplification, Compression, Efficiency and Frugality for Artificial Intelligence" at the European Conference on Machine Learning (ECML). 2023
  https://scefa.wp.imt.fr/
- Conference co-organizer "Junior Conference on Data Science and Engineering" 2023
  https://hebergement.universite-paris-saclay.fr/jdse/
- Special session chair "Simplification, Compression and Efficiency with Neural Networks and Artificial Intelligence" at the International Conference on Image Processing (ICIP). 2022
  https://cmsworkshops.com/ICIP2022/view_session.php?SessionID=1011
- Tutorial organizing chair "Pruning deep neural networks: towards efficient models on the edge" at the International Conference on Image Analysis and Processing. 2022
  https://www.iciap2021.org/t7/

Ph.D. EXAMINATION COMMITTEE

- Farzad NIKFAM (Politecnico di Torino, Italy) - "Security and Privacy in Artificial Intelligence"
  Role: Thesis referee 2024
- Yiqun LIU (Université de Rennes, France) - "Learning for new generation video coders"
  Role: Committee member 2023