

ALPER KALLE

Ph.D. Student in Computer Science

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🌐 [alpkll.github.io](https://github.com/alpkll)

Research Interests: Efficient Deep Learning · Tensor Decomposition · Model Compression · Edge AI

Education

- 2024 – Present **Ph.D. in Computer Science**, CEA (Commissariat à l'énergie atomique) - Paris-Saclay University
Thesis: *Tensor Methods for Deep Neural Network Compression*
- 2021 – 2023 **Master in Applied Mathematics**, Toulouse III - Paul Sabatier University
- 2017 – 2021 **Bachelor in Mathematics**, Galatasaray University

Publications

- 2025 **A. Kalle**, T. Rudkiewicz, M.O. Ouerfelli, M. Tamaazousti. "Distribution-Aware Tensor Decomposition for Compression of Convolutional Neural Networks". *Advances in Neural Information Processing Systems (NeurIPS)*. [Code]
- 2025 M.R.M. Boudjemaa, **A. Kalle**, X. Mai, J.H.M. Goulart, C. Févotte. "Whitening Spherical Gaussian Mixtures in the Large-Dimensional Regime". *arXiv preprint arXiv:2509.17636*.

Research Experience

- Mar – Sep 2023 **Research Intern (Master)**, IRIT & IMT, Toulouse
Topic: *Analysis of tensor decomposition methods for machine learning in the large-data regime.*
○ Advisors: Henrique Goulart (IRIT) and Xiaoyi Mai (IMT).
- Mar – May 2025 **Teaching Assistant**, Polytech Paris-Saclay, Paris
Teaching assistant for the Mathematics 2 course; managed computer labs and student projects.

Selected Talks

- Oct 2025 **Seminar**, CEA, Paris
Title: *Compression of neural networks by tensor decomposition*
- Jun 2023 **Seminar**, IRIT, Toulouse
Title: *Analysis of Tensor-Based Gaussian Mixture Model Estimation*
- Feb 2023 **Seminar**, Paul Sabatier University, Toulouse
Title: *Hypothesis Testing on the Quantum Measurements*

Skills

- Deep Learning PyTorch, TensorFlow, CUDA/cuDNN, Model Optimization
- Hardware GPU Programming, ONNX, TensorRT, Edge Deployment
- Programming Python, C#, MATLAB, SQL, Git, Slurm
- Languages Turkish (Native), English (Fluent), French (Fluent)

Awards & Scholarships

- 2021 – 2022 **Scholarship of Master Galatasaray**, Embassy of France in Turkey
- 2018 – 2021 **TUBITAK-2205 Excellence Scholarship**, TUBITAK (Turkey)
Merit scholarship for top undergraduate students in exact sciences.

Leadership & Volunteering

- 2018 – 2020 **Executive Board Member**, Matematigin Pesinde & Bahar Meetings, Istanbul
Edited weekly mathematics bulletins and organized large-scale seminar programs.
- 2018 – 2019 **General Secretary**, Mathematics Club, Galatasaray University, Istanbul
Editor of the Mathematics Journal and organizer of academic presentations.