

ALPER KALLE

Ph.D. Student in Computer Science

Paris, France
✉ kallealper@gmail.com
🌐 alpkll.github.io

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*
○ Developing novel tensor decomposition algorithms for efficient deep learning inference.
- 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**
2025 Teaching assistant for the Mathematics 2 course; managed computer labs and student projects.

Skills

- Deep Learning PyTorch, TensorFlow, JAX, Keras
- Programming Python, C++, C#, MATLAB, SQL, Git
- Languages Turkish (Native), English (Fluent), French (Fluent), Spanish (Intermediate)

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*

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.