Alexandre Zouaoui

Research Engineer on Hyperspectral applications

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Education

2020 – 2024	**PhD, Université Grenoble Alpes, Inria** *PhD in Computer Science on* Sparse and Archetypal Decomposition Algorithms for Hyperspectral Image Restoration and Spectral Unmixing *Supervisors:* Julien Mairal, Jocelyn Chanussot and Behnood Rasti
2018 – 2019	**MVA, ENS Paris-Saclay** *Master of Research in* Mathematics, Vision and Learning
2015 – 2019	**Engineering School, Télécom Paris** *Master in Computer Science Engineering* *Specializations:* Data Science and Networks
2013 – 2015	**Preparation of Engineering School Entrance Exam, Lycée Sainte-Geneviève** *Major in Maths and Physics* (MPSI, MP)

Work Experience

Jan 2024 – now	**Data Science Experts, Grenoble** *Research Engineer on* Hyperspectral applications
Dec 2019 – Sep 2020	**Inria Thoth, Grenoble** *Research Engineer* • System administrator on Thoth computing resources cluster. • *Research:* Project on deep sparse coding models for natural images classification.

Internships

Apr 2019 – Aug 2019	**Naver Labs Europe, Grenoble** *Computer Vision Intern* • Developed an attribute prediction model on urban outdoor store fronts scenes.
Jun 2018 – Sep 2018	**Uizard Technologies, Copenhagen** *Machine Learning Intern* • Developed and deployed an image upload filter model. • Designed performance tests on the entire processing pipeline.
Sep 2017 – Mar 2018	**STMicroelectronics, Singapore** *Data Science Intern* • Improved supply chain indicators using a machine learning model.

Publications

2024

1. Rasti, B., **Zouaoui, A.**, Mairal, J. & Chanussot, J. Fast Semi-supervised Unmixing using Non-convex Optimization. *arXiv preprint arXiv:2401.12609* (2024).

2023

2. Rasti, B., **Zouaoui, A.**, Mairal, J. & Chanussot, J. Image Processing and Machine Learning for Hyperspectral Unmixing: An Overview and the HySUPP Python Package. *arXiv preprint arXiv:2308.09375* (2023).

3. Rasti, B., **Zouaoui, A.**, Mairal, J. & Chanussot, J. SUnAA: Sparse Unmixing using Archetypal Analysis. *IEEE Geoscience and Remote Sensing Letters* (2023).

4. **Zouaoui, A.**, Muhawenayo, G., Rasti, B., Chanussot, J. & Mairal, J. Entropic descent archetypal analysis for blind hyperspectral unmixing. *IEEE Transactions on Image Processing* (2023).

2021

5. Bodrito, T., **Zouaoui, A.**, Chanussot, J. & Mairal, J. A trainable spectral-spatial sparse coding model for hyperspectral image restoration. *Adv. in Neural Information Processing Systems (NeurIPS)* **34,** 5430–5442 (2021).