

Tom MONNIER

PhD candidate at *École des Ponts (ENPC)*

Born on March 25th, 1995

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Last updated: July 25th, 2022

Education

2020 – 2023 **PhD**, [ENPC - Imagine](#), Paris.

Finding ways to solve computer vision tasks without manual annotations, through self-supervised learning techniques and unsupervised algorithms. Supervisor: Mathieu AUBRY

2015 – 2019 **Engineering degree**, [MINES ParisTech](#), Paris.

Main courses: Fundamental mathematics, Computer science (Python, Java, C++), Probability and statistics, Optimization, Machine learning, Deep learning for computer vision, Data analysis

2013 – 2015 **BS-level preparatory courses**, [Lycée Blaise Pascal](#), Orsay (France).

Work experience

May 2021 **Research intern**, [Adobe Research](#), San Francisco (remote).

Python

Aug. 2021 Unsupervised single-view reconstruction by analysis-by-synthesis. Supervisor: Matt FISHER

April 2019 **Research intern**, [ENPC - Imagine](#), Paris.

Python

Jan. 2020 Automatic element extraction in historical document images, algo and webapp. Supervisor: Mathieu AUBRY

Jan. 2018 **Data scientist**, [Tinychues](#), Paris.

Python

March 2019 Internship until July 2018 then part-time job (2 days/week), emphasis on representation learning, parallel programming and search queries vectorization. Supervisors: Andrey KRIVONOGOV, Artem KOZHEVNIKOV

July 2017 **Research intern in biostatistics**, [MSKCC - Papaemmanuil lab](#), New York.

Python, R

Dec. 2017 Genomic analyses including clonality and clustering. Supervisors: Matahi MOARII, Elli PAPAEMMANUIL

Skills & personal interests

Language French (mother tongue), English (fluent), Italian (beginner)

Programming Python, PyTorch, Java, C++, Bash/Unix shell, Vim, Git, Docker

Miscellaneous Analog photography, 90s Movies, Climbing, Sailing, Tennis, Hiking

Selected publications

- [1] [Tom Monnier](#), Matthew Fisher, Alexei A. Efros, and Mathieu Aubry. “Share With Thy Neighbors: Single-View Reconstruction by Cross-Instance Consistency”. In: *European Conf. on Computer Vision (ECCV)*. 2022.
- [2] Romain Loiseau, [Tom Monnier](#), Mathieu Aubry, and Loïc Landrieu. “Representing Shape Collections with Alignment-Aware Linear Models”. In: *Int. Conf. on 3D Vision (3DV)*. 2021.
- [3] [Tom Monnier](#), Elliot Vincent, Jean Ponce, and Mathieu Aubry. “Unsupervised Layered Image Decomposition into Object Prototypes”. In: *Int. Conf. on Computer Vision (ICCV)*. 2021.
- [4] [Tom Monnier](#), Thibault Groueix, and Mathieu Aubry. “Deep Transformation-Invariant Clustering”. In: *Advances in Neural Information Processing Systems (NeurIPS)*. 2020.
- [5] [Tom Monnier](#) and Mathieu Aubry. “docExtractor: An off-the-shelf historical document element extraction”. In: *Int. Conf. on Frontiers in Handwriting Recognition (ICFHR)*. 2020.

Research talks

01/07/2022 **Unsupervised visual analysis by synthesizing images**, [BAIR seminar](#), Berkeley (USA).

07/04/2022 **UNICORN [1]**, *Annual retreat of ENPC - Imagine*, La Turballe (France).

16/03/2021 **Extracting visual elements from documents [5]**, *Seminar for DHAI*, Paris (France, virtual).

04/02/2021 **DTI clustering [4]**, *Annual seminar at LIGM*, Paris (France).

10/12/2020 **DTI clustering [4]**, *Workshop for Paris Machine Learning Group*, Paris (France, virtual).

08/12/2020 **DTI clustering [4]**, *Oral presentation at NeurIPS 2020*, Vancouver (Canada, virtual).

18/11/2020 **docExtractor [5]**, *Workshop for DHNord 2020*, Lille (France, virtual).

08/09/2020 **docExtractor [5]**, *Oral presentation at ICFHR 2020*, Dortmund (Germany, virtual).