

# Yannis Montreuil

+33 6 04 43 51 68 | [yannis.montreuil@ensam.eu](mailto:yannis.montreuil@ensam.eu) |  
[linkedin.com/in/yannis-montreuil/](https://www.linkedin.com/in/yannis-montreuil/) | [github.com/Yannis-98](https://github.com/Yannis-98)

## SUMMARY

Highly motivated, organized, and analytical student with a strong sense of curiosity. Very eager to understand new concepts and have a solid drive to complete research in Deep-Learning for Computer Vision. Demonstrated solid understanding and research ability through my internships and research projects and contributed to Computer vision by writing a private research paper for *ONERA* on semi-supervised methods and image augmentations influences.

## EDUCATION

- Master of Science in Robotics focus on Deep Learning and Computer Vision** Aug. 2021 – Now  
Sorbonne University — Ranked First in France in Robotics Paris, France
- Machine Learning, Deep Reinforcement Learning, Semi-supervised Learning, Computer Vision, Deep Learning.
  - Robotics: Non-Linear Controls, Robot manipulators, State Space Estimation Method (Kalman...), Mobile Robots.
- Combined Bachelor and Master of Science in Engineering** Aug. 2019 – Now  
Arts et Métiers: Outstanding Performance, BSc : 3.99/4.0 GPA — Top French Grande Ecole Paris, France
- Engineering: State Space Estimation, Statistics, Probabilities, Machine Learning, Deep learning.
  - Mathematics: Convex and Non-Convex Optimization, Constraint Optimization, Finite Element Analysis.
- Bachelor of Science in Mechanical Engineering** Sept. 2015 – June 2019  
Sorbonne University: Honors, 3.86/4.0 GPA - Ranked First in France in Engineering Paris, France
- Mechanics: Continuum mechanics, Stability and Continuum Vibrations, Fluids Mechanics.
  - Mathematics: Algebra (Hilbert space, Variational problem ...), Statistics and Probabilities, Analysis, Optimization.

## EXPERIENCE

- Superimposed fingerprint separation with Deep Learning methods** Sept 2021 – Now  
IDEMIA Paris, France
- Research Project: developing and implementing innovative Deep Learning methods to determine different fingerprints during a biological removal using the Tsinghua University's fingerprints database (*Jianjiang Feng, Yuan Shi, Jie Zhou, "Robust and Efficient Algorithms for Separating Latent Overlapped Fingerprints", IEEE Transactions on Information Forensics and Security, vol. 7, no. 5, pp. 1498-1510, 2012*).
- Research Scientist Intern** May 2021 – Aug 2021  
ONERA, *The French Aerospace Lab* and CNES, *National Center for Space Studies* Paris, France
- Successfully wrote a Research paper for *ONERA* on semi-supervised learning methods and image augmentations for the segmentation of satellite images (FancyPCA, Mixup, CutMix methods...).
  - Performed the implementation and optimization of semi-supervised algorithms named *Mean Teacher* and *Naive Student* for the identification of buildings in satellites images (PyTorch, TensorFlow...). Obtained a 30 % performance improvement on detection after implementing image augmentations, *Mean Teacher* and optimizing hyperparameters.
- Leading Artificial Intelligence development - Dassault UAV Challenge** Sept 2020 – June 2021  
Arts et Métiers Institute of Technology - Dassault Aviation Paris, France
- High Selective project (6 students among 120): Built a drone that autonomously reached targets. In charge of real-time image methods to identify targets and led a team of 6 students.
  - Conducted research on Deep Learning marks identification based on the YOLOV4 method. Initiated the Database with Python scripts to obtain artificial images by varying parameters to obtain a large spectrum of images.
- Data Scientist Intern** June 2020 – Aug 2020  
So Charm Alfort-Ville, France
- Optimized and automated the Database in VBA, SQL, and Python. Improved the inventory and logistics management by reducing by 60 % the dashboard usage time with VBA macros and Python scripts.
  - Completed a statistical analysis of the database to forecast next week's orders (Logistic Regression...) to dimension the staff. Obtained 23 % reduction in unnecessary costs and 9 % improvement in order dispatch efficiency.
- Junior Company Team Leader** Sept 2019 – June 2020  
Arts et Métiers Institute of Technology Lille, France
- Supervised a team of 4 people, made up of 2 people in charge of the commercial development of the Junior Company, a communication manager, and a quality manager.
  - Monitored the recruiting process to enroll students to carry out company's project (various fields: electrical engineering, computer science, mechanical engineering...). Managing the group project and completing projects (Bouyuges, Safran...). Drafting of client agreements, doing the intermediary between the students and the company.
- Data Analyst Intern** May 2016 – Aug 2016  
Atradius Credit Insurance Levallois, France
- Developed and improved an IT tool to manage risk management processes in the insurance field. I successfully realized the IT tool in VBA for the management part, and PL/SQL for the data use part.
  - Allowed the team to choose each process to launch (and thus not launch the complete process each time) and to drastically reduce the KPI calculation time (40 % of calculation time).

## AWARDS AND PERSONAL ACHIEVEMENT

---

### Academics:

- Recognition for top 5% of students in academics at Arts et Métiers Institute of Technology.
- Honors award from Sorbonne University for being a top student.
- Representing students at the University committee.

### Personal achievements:

- Participate in humanitarian races.
- Humanitarian marauding.

### Sports:

- Selected by the French Tennis federation to referee the Roland Garros competition.
- Tennis and Table Tennis team captain for 10 years.
- Table Tennis Club Player of the Year.
- Table Tennis and Tennis winner of Parisian tournaments.
- Admitted to the Soccer training center of Paris.

## TEACHING

---

### University:

- Tutoring of undergraduate students in mathematics, computer science and mechanics.
- Tutoring of several high school and university students in science subjects.
- Teaching science in association or private institution.

### Sports:

- Tennis and Table Tennis coach diploma.
- Coaching Tennis every week, management of a group of 6 children.
- Coaching Table Tennis to young players every week, management of a group of 20 children.

## LANGUAGES

---

- French: Native.
- English: TOEFL 100
- Spanish: Intermediate.

## RESEARCH PROJECTS

---

**Risks and Accident Prediction (Oct 2021 - Now):** Implementation of a research paper from Stanford University to predict a probability density zone to assess the risk of a crash on a video (*Kuo-Hao Zeng and Shih-Han Chou and Fu-Hsiang Chan and Juan Carlos Nieves and Min Sun, Agent-Centric Risk Assessment: Accident Anticipation and Risky Region Localization, Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2017*)

**Colorization transformer (Feb 2021 - July 2021):** Implemented novel approach from Google to colorize black and white images based on self-attention. Two subsequent fully parallel networks upsample the coarse colored low-resolution image into a finely colored high-resolution image (*Manoj Kumar, Dirk Weissenborn, Nal Kalchbrenner, Colorization Transformer, 2021, ICLR 2021 Camera Ready*).

**Image Inpainting (Jan 2020 - July 2020):** Reconstruction of deteriorated images, study the effect of Ridge and Lasso penalization. Training a neural network to predict missing parts of an image such that the predictions are both visually and semantically consistent. Partial Convolution implementation to propose an alternative with the previous method.

**Autonomous Submarine (Jan 2018 - July 2018):** Built a complete autonomous submarine to locate oil slicks on the surface of the water with different sensor such as luminosity and pressure sensors. When a slick is located, the gps data is sent directly to an operator.

## ASSOCIATIVE EXPERIENCES

---

### Tennis and Table Tennis Team Captain and Coach

Sept 2013 – Now

USOAM Tennis, and ASTT Table Tennis

Athis-Mons, France

- Leading Tennis and Table Tennis team for 10 years. Managing a team of 5 competitive players to provide the most competitive team possible. Managing the organization of the different tournaments.

### Civic Service

Sept 2017 – June 2018

USOAM Tennis

Athis-Mons, France

- Operated the internal and external communication of USOAM Tennis. Through a civic service, I produced articles, videos, and interviews to inform members and potential members every week.
- Developed the action of Tennis in an underprivileged environment by promoting free events.

## SKILLS

---

**Technical:** Reporting, Deep-Learning, Machine-Learning, automation, optimization, KPIs creation (Academic, internships).

**Programming:** Python, PL/SQL (High-level, Data Science internship, Data analysis internship), VBA (Developer, Data Scientist intern, Data Analyst intern), MATLAB (Deep Learning, numerical analysis project), R, Ruby, C, Arduino, FORTRAN.