Pierre LE JEUNE

PhD Student/Data Scientist

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Technical Skills

Overview

Computer Vision • Deep Learning

Data Visualization

Git

Programming

Python • PyTorch

C • C++ • Java

JavaScript • HTML • CSS

Education

PhD. in Deep Learning
Object Detection and Few-shot Learning.
Sorbonne University
2020 - 2023 | Paris, France

MSc. Mathematical Modelling and Computation
Deep Learning and Computer Vision
Danish Technical University
2018 - 2020 | Copenhagen, Denmark

Centrale Nantes
MEng. in Computer Science and artificial intelligence.
2016 - 2019 | Nantes, France

Classes préparatoires aux grandes écoles
Mathematics, physics and computer science
2014 - 2016 | Caen, France

Experience

Sep. 2020 - Sep. 2023 — **Data Scientist and PhD Student** — *COSE - Sorbonne University*
Development of an **embedded computer vision system** able to detect objects in extremely **large images in real-time**.
- Optimization of state-of-the-art algorithms with **TensorRT**
- Proposition of novel methods for novel objects adaptation based on **Few-Shot Learning**.
- Participation in other projects: photogrammetry, navigation (Kalman filters), and camera calibration.

Sep. 2019 - Jun. 2020 — **Teacher Assistant** — *Danish Technical University*
Exercise sessions, helping students and assignment correction.
- Logical theory for uncertainty and learning (course description).
- Social data analysis and visualization (course description).

Apr. 2018 - Aug. 2018 — **R&D Engineer internship** — *Dataiku*
- Work in a rapidly growing medium-sized company specialized in **Data Science**.
- Creation of an interactive **decision tree builder** with d3.js.

Research

2020 — **MSc. Thesis** — *Danish Technical University*
3D Ken Burn Effect: Improving techniques for depth estimation and image inpainting.
- Develop an end-to-end pipeline to perform the 3D Ken Burn Effect and Dolly zoom from still images.
- Train deep neural network to perform **depth estimation** and **image inpainting**.

2018-2019 — **Multiple deep learning projects** — *Danish Technical University*
Projects conducted within the scope of different courses, alone or in team. Approximately 3 to 4 months spent on each project.
- Learning physical interactions with discrete VAEs.
- Bayesian data augmentation with **Adversarial Networks**.
- Deep Reinforcement Learning to play DOOM.
- Image enhancement with generative **Adversarial Networks**.

Publications

P. Le Jeune and A. Mokraoui, **Cross-Scale Query-Support Alignment Approach for Small Object Detection in the Few-Shot Regime**, IEEE International Conference on Image Processing 2023 (ICIP).

P. Le Jeune and A. Mokraoui, **Extension de l'*Intersection over Union* pour améliorer la détection d'objets de petite taille en régime d'apprentissage few-shot**, GRETSI 2023, XXIXème Colloque Francophone de Traitement du Signal et des Images, Grenoble, France.

P. L. Jeune and A. Mokraoui, **Improving Few-Shot Object Detection through a Performance Analysis on Aerial and Natural Images** 2022 30th European Signal Processing Conference (EUSIPCO), 2022.

P. L. Jeune, M. Lebbah, A. Mokraoui and H. Azzag, **"Experience feedback using Representation Learning for Few-Shot Object Detection on Aerial Images"** 2021 20th IEEE International Conference on Machine Learning and Applications (ICMLA), 2021, pp. 662-667.

Misbah Razzaq, Lokmane Chebouba, Pierre Le Jeune, Hanen Mhamdi, Carito Guziolowski, et al.. **Logic and Linear Programs to Understand Cancer Response**. Liò P., Zuliani P. (eds) Automated Reasoning for Systems Biology and Medicine. Computational Biology, vol 30. Springer, Cham, 2019, pp.191-213.