

Arthur Douillard

DEEP LEARNING RESEARCH SCIENTIST

Paris, France

✉ ar.douillard@gmail.com | 🏠 arthurdouillard.com | 📷 arthurdouillard

Education

PhD in Computer Science

Paris, France

SORBONNE UNIVERSITY (LIP6) *Advisor: Pr. Matthieu Cord*

Jul 2019 - Now

- In-going PhD thesis on Continual Learning for Computer Vision.

M.S. in Computer Science (*Diplôme d'ingénieur*) Major GPA: 3.7 / 4.0

Paris, France

EPITA *Advisor: Pr. Reda Dehak*

2014 - 2018

- Machine Learning, Deep Learning, NLP, Python, C++, Golang, Scala/Kafka/Spark, Image processing, Text Mining
- Stats & Proba, Linear Algebra, Convex Optimization, Logic

Publications

PLOP: Learning without Forgetting for Continual Semantic Segmentation

CVPR

ARTHUR DOUILLARD, YIFU CHEN, ARNAUD DAPOGNY, MATTHIEU CORD

2021

Continuum: Simple Management of Complex Continual Learning Scenarios

Findings of CLVISION (CVPR Workshop)

ARTHUR DOUILLARD, TIMOTHÉE LESORT

2021

Insights from the Future for Continual Learning

CLVISION (CVPR Workshop)

ARTHUR DOUILLARD, EDUARDO VALLE, CHARLES OLLION, THOMAS ROBERT, MATTHIEU CORD

2021

PODNet: Pooled Outputs Distillation for Small-Tasks Incremental Learning

ECCV

ARTHUR DOUILLARD, MATTHIEU CORD, CHARLES OLLION, THOMAS ROBERT, EDUARDO VALLE

2020

Experience

Heuritech

Paris, France

RESEARCH SCIENTIST *Advisor: Dr. Charles Ollion, Dr. Thomas Robert*

July 2019 - Now

- Improving SotA models in production and advising the R&D team.

Heuritech

Paris, France

RESEARCH ENGINEER *Advisor: Alexandre Ramé*

Sept 2018 - June 2019

- Developed novel attention mechanisms leading up to a new proposed vertical (logo detection in the wild).
- Speed up training time of DNNs by 10x and inference time by up to 5x.
- Implemented numerous research papers in production leading to better forecast our product.

Dataiku

Paris, France

RESEARCH ENGINEER INTERN *Advisor: Dr. Léo Dreyfus-Schmidt*

Feb - Aug 2018

- Implemented deep learning models for computer vision (transfer learning, detection, training schedules, fewshot, autoML, etc.) that are still in production 2 years later.
- Won the 1st & 2nd prize of the NATO Innovation Challenge as the lead scientist of my team with satellite imagery project.
- Organized & presented internal conferences on deep learning.

ZebraIA

Paris, France

GRADUATE STUDENT RESEARCHER *Advisor: Dr. Guillaume Palacios*

Aug 2017 - Jan 2018

- Researched & Implemented Deep Learning NLP papers for a medical chatbot.

MyDrive Solutions

London, United Kingdom

DATA SCIENTIST INTERN *Advisor: Dr. Zoulficar S. Younes*

Sept 2016 - Jan 2017

- Migrated the mapping database from Here Maps to OpenStreetMaps reducing cost by 6 figures £
- Analyzed and applied Machine Learning algorithms on driver and medical data in Python (Pandas, Scikit-Learn, Keras) and R for multiple clients across the world (England, Italy, France, Indonesia)

Teaching

EPITA · Master level · DEEP LEARNING LECTURER FOR +60 STUDENTS PER YEAR

2019 - Now

SORBONNE UNIVERSITÉ · Master level · DEEP LEARNING TEACHER ASSISTANT FOR +70 STUDENTS PER YEAR

2019 - Now

EPITA · Bachelor level · COMPUTER SCIENCE TEACHER ASSISTANT

2016 - 2018

- C/C++ Programming, Unix, Shell, Algorithm theory, Java, SQL, Web Programming, Project Management
- Responsible of the course materials produced by 30 teacher assistants

Personal Projects

APRIL 13, 2021

ARTHUR DOUILLARD · RÉSUMÉ

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- **Continual Learning data loaders** for easy research reproducibility ([link](#)). Used by multiple research teams across the world and by the CVPR21 Continual competition organizers.
- Implementation of a dozen papers in Pytorch and Tensorflow cumulating to more than 300 ★ ([link](#)).
- **Blog** where I explain Deep Learning concepts ([link](#)) w/ 6k visitors per month
- Memory allocator on a **cluster of machines using MPI**.
- Minor contribution to **scikit-learn** fixing a bug in the RFECV algorithm.
- Efficient implementation of Damerau-Levenshtein distance with **Radix Trie** and mmap in C++.
- **Compiler front-end/back-end** for the language Tiger, coded in C++, YACC, Bison, and several flavors of ASM.

Skills

- **Programming Languages:** Python C/C++ Shell SQL Java Scala Golang Prolog Haskell R Latex
- **Data Science:** Pytorch Tensorflow / Keras Scikit-Learn Numpy Pandas
- **Tools & OS:** Linux MacOS Git Jupyter Vim VSCode
- **Languages:** French (native) English (TOEIC 965/990) Spanish Mandarin (Very beginner) Esperanto (notions)

Talks

CONTINUALAI , CONTINUUM: SIMPLE MANAGEMENT OF COMPLEX CONTINUAL LEARNING SCENARIOS	Apr 2021
DATAIKU , CONTINUAL LEARNING FOR SEMANTIC SEGMENTATION	Jan 2021
EXTRALITY , CONTINUAL LEARNING FOR SEMANTIC SEGMENTATION	Nov 2020
ECCV , PODNET: SMALL-TASKS INCREMENTAL LEARNING	Aug 2020
CONTINUALAI , PODNET: SMALL-TASKS INCREMENTAL LEARNING	May 2020
SORBONNE , INCREMENTAL LEARNING	Jun 2019
DATAIKU , LOWSHOT LEARNING	Aug 2018
NATO , NATO INNOVATION CHALLENGE (IN FRONT OF THE SUPREME COMMANDER AND A SMALL DOZEN OF GENERALS ACROSS THE WORLD)	May 2018
DATAIKU , OBJECT DETECTION WITH DEEP LEARNING	April 2018
AGROPARISTECH , STATE OF THE FOODTECH IN FRANCE	Jan 2018

Academic Services

NEUROCOMPUTING · REVIEWER	2021 - Now
INTELLIGENT TRANSPORTATION SYSTEMS SOCIETY's IV · REVIEWER	2021 - Now
TPAMI · REVIEWER	2021 - Now