Eden BELOUADAH, Ph.D.

Personal Information

Address: Paris, France
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Links: Website | Scholar | GitHub | LinkedIn | Kaggle

Education

Ph.D. in Artificial Intelligence - Continual Learning Dec. 2021
IMT Atlantique, Brest & CEA-LIST, Paris-Saclay, France.

Master's degree in Machine Learning - Ranked 2/40 Sep. 2018
University of Paris-Saclay, Orsay, France.

Master's degree in Artificial Intelligence - Ranked 1/40 Jun. 2017
University of Sciences and Technology Houari Boumediene (USTHB), Algiers, Algeria.

Bachelor's degree in Mathematics and Computer Science - Ranked 2/80 Jun. 2015
University of Sciences and Technology Houari Boumediene (USTHB), Algiers, Algeria.

Professional Experience

Deep Learning Researcher | Datakalab, Paris, France Dec. 2021 - present
Tools: Tensorflow, Pytorch, Jira, Hugging Face, Git, AWS, GCP, SLURM
- use compression techniques on object detection models and deploy them on the edge
- propose continual learning methods for context adaptation without catastrophic forgetting
- work on large language models and diffusion models
- write CD/CI pipelines, unit tests, and master VSCode debugging tool
- deliver on-demand projects to clients
- write a scientific publication to validate academic results

Research and Development Internships

Continual Deep Learning | CEA-LIST, Paris-Saclay, France Mar. 2018 - Sep. 2018
Tools: Pytorch, Git, SpaCy, Numpy, Scikit-Learn, Latex
- propose memory-free class-incremental learning method for image classification
- implement in Python a range of SoTA methods to serve as a baseline for my Ph.D later
- master convolutional neural networks and support vector machines
- write a scientific publication to validate academic results

Adaptation of "Bee Swarm Optimization" for continuous problems | LRIA, Algeria Jan. 2017 - Jun. 2017
Tools: Java, GUI, Latex, Git.
- study state-of-the-art methods for combinatorial and continuous optimization
- propose and implement in Java a method to adapt the Bee Swarm Optimization (BSO) heuristic to continuous optimization problems

Fall detection of elderly people using Kinect sensor | LRIA, Algeria Jan. 2015 - Jun. 2015
Tools: C, C#, QtCreator, OpenCV, Microsoft SDK, Visual Studio, Kinect
- study state-of-the-art methods for fall detection
- propose and implement in C and C# two-methods for fall detection
- master using Kinect camera to extract skeleton keypoints and depth map
- write a scientific publication to validate academic results

Selected Publications (See full list here)

Belouadah, E., Dapogny, A., Bailly, K., "**MultIOD: Rehearsal-free Multihead Incremental Object Detector**". Under review. Pre-print: https://arxiv.org/abs/2309.05334

Lomonaco, V., Lorenzo, P., Cossu, A., Carta, A., Graffieti, G., Hayes, T.,...Belouadah, E.,..... Popescu, A.,...(*long list*). "**Avalanche: an End-to-End Library for Continual Learning**". Proceedings of the Computer Vision and Pattern Recognition workshops (W-CVPR 2021).

Belouadah, E., Popescu, A. and Kanellos, I., 2020. **A Comprehensive Study of Class Incremental Learning Algorithms for Visual Tasks**. Elsevier's Neural Networks, t. 135, pp. 38-54.

Belouadah, E. and Popescu, A., 2020. **ScaIL: Classifier Weights Scaling for Class Incremental Learning**. The IEEE Winter Conference on Applications of Computer Vision (WACV 2020). pp. 1266-1275.

Belouadah, E. and Popescu, A., 2019. **IL2M: Class incremental learning with dual memory**. Proceedings of the IEEE International Conference on Computer Vision (ICCV 2019). pp. 583-592.

Belouadah, E. and Popescu, A., 2018. **DeeSIL: Deep-Shallow Incremental Learning**. Proceedings of the European Conference on Computer Vision workshops (W-ECCV 2018).

Books

Belouadah, E., Abbad, H. and Zebbouchi, A., 2017. **Learn to program in C language**. Translated from French to Arabic (original title: 'Apprenez à programmer en C!, Mathieu Nebra). (link).

Selected Certifications (see full list here)

Generative AI with Large Language Models (16 hours)	DeepLearning.AI	Oct 2023
Deep Learning Specialization (122 hours) (cert. 1 | cert. 2)	DeepLearning.AI	Ongoing
Advanced Python: going further (5 hours) (certificate)	Udemy	Dec. 2022
Google Cloud Platform (GCP) Fundamentals for Beginners (4 hours) (certificate)	Udemy	Nov. 2022
Git and Gitlab: from beginner to professional (9 hours) (certificate)	Udemy	Jul. 2022
Deep Learning for Computer Vision with Tensorflow 2 (12 hours) (certificate)	Udemy	Feb. 2022
AWS Machine Learning Course (8 hours) (certificate)	Udacity	Jul. 2020

Teaching

Deep Learning Dec. 2020 - Feb. 2021
Students of 2nd year of Master's, Centrale Supélec Superior School (Paris-Saclay)

Operating Systems (Unix) Sep. 2020 - Dec. 2020
Students of 2nd year of Bachelor's, Paris-Sud university (Paris-Saclay).

Supervising

Research internship on Continual Learning without memory Mar. 2021 - Sep. 2021
Habib Slim (habib.slim@grenoble-inp.org), ENSIMAG, Grenoble,France.

Reviewing

Elsevier's Neurocomputing Journal	Aug. 2022-present
CLVISON Workshop, Computer Vision and Pattern Recongnition (W-CVPR).	Mar. 2023
Winter Conference on Applications of Computer Vision (WACV)	Aug. 2022
Winter Conference on Applications of Computer Vision (WACV).	Aug. 2021
British Machine Vision Conference (BMVC 2021).	Jun. 2021
British Machine Vision Conference (BMVC 2020).	Aug. 2020

Activities and Awards

Virtual Participation in the NASA Space apps challenge.	Oct. 2019
3rd position in iFood-2019 Kaggle challenge with CEA-LIST Team, France	Jun. 2019
1st position in LEGO Mindstorms EV3 DZBOT challenge, Free Forward Team, Algeria.	Dec. 2015
4th position in video games development challenge (AGC), Brother & Sister Team. Algeria.	May 2015
1st position in the National Judo Championship, Médéa, Algeria.	Jul. 2010

Languages

Arabic - French - English

Interests and Extracurricular Activities

Traveling - reading - playing video games - practicing sports

Soft Skills

Autonomy, team spirit, motivation, dedication