MohamedAli Souibgui

AI Researcher

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About

Highly skilled researcher specializing in Computer Vision (CV) and Machine Learning (ML). I received the PhD degree in computer science from the Autonomous University of Barcelona (UAB). I am currently a post-doc researcher at the Computer Vision Center (CVC), Barcelona, Spain. I developed several machine learning models and published novel research papers. Passionate about Algorithms and Data Structures (ADS) and used to participate in coding competitions (International Collegiate Programming Contest (ICPC), hackerrank, etc).

Work Experience

Dec 2022–Now
Post-doc Researcher, *Computer Vision Center (CVC)*, Barcelona, Spain.
- Being part of the European project ELSA. work on secure and safe AI systems.
- Contribute within the use case of document intelligence (preserving privacy during training and inference through federated learning and differential privacy).

Oct 2019–Dec 2022
Pre-doc Researcher, *Computer Vision Center (CVC)*, Barcelona, Spain.
- Responsible on the document image processing part of research and development within the European project Decrypt.
- Design, implement and maintain machine learning models for text recognition (OCR), object detection, image quality enhancement and image generation.
- Publish and present the novel research work on top ranked journals (PAMI, PR) and conferences (AAAI, WACV, ICPR)

Oct 2018–Aug 2019
Computer Vision Researcher, *CRNS*, Sfax, Tunisia.
- Being part of the DeepVision and work on several computer vision problems.
- Design and implement deep learning models for image quality enhancement and image generation.

May 2019–Jun 2019
Research Intern, *Computer Vision Center (CVC)*, Barcelona, Spain.
- Design and implement a deep learning model for text image generation.

Jan 2019–Apr 2019
Intern, *Satoripop*, Sousah, Tunisia.
- Being a part of the R&D Team.
- Design and implement a deep learning model for automatic website code generation (HTML and CSS) from a handwritten sketch design image.

Education/Certificates

Oct 2019–Dec 2022 **PhD degree in computer science**, *Autonomous university of Barcelona*, Spain, Topics: *Computer Vision/Deep Learning/Document Analysis*.

2018 **Certificate in Deep Learning Specialization**, *a 5-course specialization by deeplearning.ai*, on Coursera.

Sep 2015–Mar 2018 **Master's degree in computer science**, *University of Monastir*, Tunisia, *Master's degree*.
Topics: *Automatic Reasoning Systems (Logics, Constraint Programming, ...)/Pattern Recognition/Artificial Intelligence*

Sep 2012–Jun2015 **Bachelor's degree in computer sciences**, *University of Monastir*, Tunisia, *Bachelor's degree*.
Topics: *Object Oriented Programming/Algorithms and Data Structures/Software Development/Databases (SQL)/ Complexity/etc.*

Areas of Expertise

Deep Learning:
- Artificial Neural Networks (**ANN**)
- Convolutional Neural Networks (**CNN**)
- Generative Adversarial Networks (**GANs**)
- **Transformers**
- Recurrent Neural Networks (**RNN**)
- Few-shot Learning / Continual Learning
- Self-supervised Learning

Computer Vision:
- **Object Detection**
- **Classification**
- Optical Character Recognition (**OCR**)/**Text Spotting**
- **Image Processing and Enhancement**
- **Image Generation**
- etc.

Programming Languages/Libraries

- **Python (Pytorch , Keras, Tensorflow, OpenCV, scikit-learn, Numpy, Pandas, . . .)**
- **Matlab**, C, C++, C#, Java . . .
- Latex, Javascript, HTML, CSS (Bootstrap), . . .

Research Interests

- **Artificial intelligence**

- **Computer vision**
- **Machine learning/Deep learning**
- **Document Analysis/Intelligence/Understanding**
- **Natural language processing**

Selected Publications

This is a selected list, for the full list of publications, please check my google scholar.

Journals:

- **Souibgui, M. A.**, & Kessentini, Y. (2020). *DE-GAN: A conditional generative adversarial network for document enhancement*. IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**).
- Jemni, S. K., **Souibgui, M. A.**, Kessentini, Y. &. Fornés, A (2021). *Enhance for Better Reading: A Multi-Task Adversarial Network for Handwritten Document Image Enhancement*. **Pattern Recognition**.
- **Souibgui, M. A.**, Fornés, A., Kessentini, Y., & Megyesi, B. (2022). *Few Shots Are All You Need: A Progressive Few Shot Learning Approach for Low Resource Handwritten Text Recognition*. Pattern Recognition Letters (**PRL**).

Conferences:

- Dhiaf, M, **Souibgui, M. A.**, Wang, K., Liu, Y, Kessentini, Y. Fornes, A. Cheikh Rouhou. A. (2023). *CSSL-MHTR: Continual Self-Supervised Learning for Scalable Multi-script Handwritten Text Recognition*. In International Conference on Computer Vision (**ICCV**). (Submitted)
- **Souibgui, M. A.**, Biswas, S., Mafla, A., Biten, A. F., Fornés, A., Kessentini, Y., Lladós, J, Gomez, L, & Karatzas, D. (2022). *Text-DIAE: Degradation Invariant Autoencoders for Text Recognition and Document Enhancement*. In 2023 AAAI Conference on Artificial Intelligence (**AAAI**).
- **Souibgui, M. A.**, Biswas, S., Jemni, S. K., Kessentini, Y., Fornés, A., Lladós, J, & Pal, U. (2022). *DocEnTr: An End-to-End Document Image Enhancement Transformer*. In 2022 26th International Conference on Pattern Recognition (**ICPR**).
- **Souibgui, M. A.**, Biten, A. F., Dey, S., Fornés, A., Kessentini, Y., Gomez, L., Karatzas, D. & Lladós, J (2022). *One-shot Compositional Data Generation for Low Resource Handwritten Text Recognition*. In IEEE/CVF Winter Conference on Applications of Computer Vision (**WACV**) (pp. 935-943).
- **Souibgui, M. A.**, Fornés, A., Kessentini, Y., & Tudor, C. (2020). *A Few-shot Learning Approach for Historical Ciphered Manuscript Recognition*. In 2020 25th International Conference on Pattern Recognition (**ICPR**).

Languages

English	Excellent writing, Excellent speaking
French	Good writing, good speaking
Arabic	Native language

Awards

- **Best student paper award:** The prize was given by the ICPR 2020 organizing committee for the paper entitled: $A\ Few-shot\ Learning\ Approach\ for\ Historical\ Ciphered\ Manuscript\ Recognition$