



Antonio Barbalau

Machine Learning Research and Development

ACADEMIC EXPERIENCE

Computer Science Phd

University of Bucharest

2019 - Present

- Currently writing my thesis on weakly-supervised and self-supervised learning. Published six papers which can be found here:

<https://scholar.google.com/citations?user=EzY9Q7YAAAAJ>

Most notably, one of my first-author papers got accepted as an oral presentation (1% acceptance rate) at NeurIPS 2020.

Teaching Assistant

University of Bucharest

2017 - 2022

- Most notably: Machine Learning and Deep Learning for the AI Master and Artificial Intelligence for the undergraduate level.

Research Assistant

University of Bucharest

2020 - 2022

- Involved in research projects covering various topics including authorship identification and video anomaly detection. Those projects ran in partnership with various companies and universities including Bitdefender, Tremend, BRD and the University of Central Florida.

Short-term Scholar

University of Central Florida

May 2021 - September 2021

- Involved in research at the UCF Center for Research on Computer Vision on multi-object tracking, mainly focusing on self-supervised learning for transformer models.

INDUSTRY EXPERIENCE

Senior Machine Learning Researcher

Bitdefender

2024 - Present

- Developing novel approaches for domain generalization and bias detection and prevention. Currently focusing on improving the generalization capabilities of fine-tuned foundational models.

Head of AI

Vatis.tech

2023 - 2024

- Research and development for complete Automatic Speech Recognition systems: multi-lingual transcription, word-level timestamps, speaker diarization, real-time inference (stream processing).
- Most notably: developed a transcription system capable of transcribing audios featuring multiple languages and real-time language switches, proposed and developed a novel end-to-end speaker diarization deep learning model capable of real-time performance.

Machine Learning R&D

Sparktech Software

2017 - 2020

- Worked on an Automated Vouchering Tool. The project aimed at extracting data from invoices and invoice-like documents in order to be compared to a General Ledger. Invoices did not come in any predefined templates or structures. My contribution included research and development on many deep learning sub-projects such as: signature detection and matching, logo detection and matching, page deskewing and handwritten number extraction.
- I've also coordinated the research and development for an Explainable AI platform hosted on the cloud. As part of the research done for this project I have proposed a novel exemplar synthetization framework which can be found here:
<https://arxiv.org/abs/2006.03896>

Contact Information

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