Bruno **Casella**

PhD in Modeling and Data Science · Data Scientist · Computer Engineer

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Summary

PhD student in Modeling and Data Science at the University of Turin, granted by Leonardo Company. Have graduated in Computer Engineering in 2020 with a thesis on the performance of the Reinforcement Learning algorithm AlphaZero for the game of Chess in different game and resources scenarios. Have received the Master's Degree in Data Science for management in 2021 with a thesis on Federated Transfer Learning, proposing a novel technique based on test-time parameter aggregation of neural networks.

3+ years of software management experience.

Love for open source projects and big fan of Linux and macOS. Always interested in learning new technologies, tools and methods.

Work Experience

Professional accounting studio "Giuseppe Casella"
Catania, Italy

SOFTWARE MANAGER
Oct. 2017 - July 2021

- In charge of processing accounting data via remote connection system.
- Continuously improved the infrastructure architecture of the studio since launching the service.

Bar Pizzeria Via Caracciolo
Turin, Italy

WEB PROGRAMMER
Feb. 2022 - May. 2022

- https://barpizzeriaviacaracciolo.github.io/

Education

University of Catania
Catania, Italy

B.S. IN COMPUTER ENGINEERING
Oct. 2016 - Mar. 2020

- Graduated with a thesis on the evaluation of an AI Method based on Reinforcement Learning Method for the game of Chess.
- Final grade 100.

University of Catania
Catania, Italy

M.S. IN DATA SCIENCE FOR MANAGEMENT
Oct. 2019 - Sep. 2021

- Graduated with a thesis on Federated Transfer Learning using Network Composition, proposing a novel technique based on test-time parameter aggregation of neural networks.
- Final grade 110L.

University of Turin
Turin, Italy

PH.D. IN MODELING AND DATA SCIENCE
Nov. 2021 - Present

- Website https://dottorato-mds.campusnet.unito.it/do/home.pl
- Fields of interest:
    - Federated Learning
    - Transfer Learning
    - Confidential Computing
    - High Performance Computing
    - Deep Learning
    - Blockchain

Certificates

2021	**DEEP LEARNING WITH PYTORCH: ZERO TO GANS – Jovian.ai,** Jovian.ai link certificate
2021	**IMPROVING DEEP NEURAL NETWORKS: HYPERPARAMETER TUNING, REGULARIZATION AND OPTIMIZATION**, DeepLearning.AI, Coursera "Specialization" link certificate
2021	**NEURAL NETWORKS AND DEEP LEARNING**, DeepLearning.AI, Coursera "Specialization" link certificate
2021	**BLOCKCHAIN BASICS**, University of Buffalo, Coursera "Specialization" link certificate

Publications

CONFERENCE

2022	**Transfer Learning via Test-Time Neural Networks Aggregation**, VISAPP	*Online*
2022	**Benchmarking FedAvg and FedCurv for Image Classification Tasks**, ITADATA	*Milan, Italy*
2022	**Federated Learning meets HPC and Cloud**, ML4ASTRO	*Catania, Italy*
2023	**Predicting Cryptocurrencies Market Phases Through On-Chain Data Long-Term Forecasting**, ICBC	*Dubai, United Arab Emirates*

Journal

2023	**FedER: Federated Learning Through Experience Replay and Privacy-Preserving Data Synthesis**, CVIU	*Online*
2023	**MIFL: Multi-Input Neural Networks in Federated Learning**, Cell Patterns	*Online*
2023	**Experimenting with Normalization Layers in Federated Learning on non-IID scenarios**, IEEE TNNLS	*Online*