



Andrea Terlizzi

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ABOUT ME

As a highly motivated and detail-oriented MSc student in Computer Science, I have a strong passion for science, mathematics, and artificial intelligence, especially in the areas of deep learning for bioinformatics, bio-inspired neural models, and deep reinforcement learning. In 2019, I won a place in the CyberChallenge competition and was a First Ascent competition participant in 2021.

Having graduated with honors in my Bachelor's degree, I am currently pursuing a Master's degree at the University of Salerno, with a specific focus on Data Science & Machine Learning. I am currently conducting research on deep learning at Neurone Lab and am working on various projects, including the development of graph generative models for neural architectures, graph neural networks for protein tertiary structure reconstruction, and image captioning deep learning models for remote sensing images.

In addition to my current research, I have previous experience as an industrial researcher in the blockchain field. Overall, I am excited to continue exploring new deep learning-related topics and techniques, constantly expanding my skill set and knowledge base in the field of computer science.

WORK EXPERIENCE

Guest Researcher

Rigenera S.R.L. [01/11/2021 – 01/06/2022]

City: Rome

Country: Italy

Website: <https://www.rigenerasrl.eu/>

Email address: info@rigenerasrl.eu

Name of unit or department: Rigenera S.R.L. Research - **Business or sector:** Professional, scientific and technical activities

Researcher developing innovative blockchain solutions for academic and industrial purposes, specifically efficient consensus algorithms and post-quantum blockchain-based signature schemes.

Main required skill included mathematical modeling, consensus algorithms, blockchain technologies, Web3, and smart contracts.

Internal Internship

Università degli Studi di Salerno [22/02/2021 – 30/08/2021]

Address: Via Giovanni Paolo II, 132, 84084 Fisciano (Italy)

City: Fisciano

Country: Italy

Website: <https://www.unisa.it/>

Email address: urp@unisa.it

Name of unit or department: DinfUnisa - Computer Science Department of Università degli Studi di Salerno - **Business or sector:** Professional, scientific and technical activities

Design and implementation of a negotiation algorithm, in order to create an innovative, quantum-safe consensus mechanism for blockchains.

Software designer and developer

Freelancing activity [15/01/2020 – 23/12/2020]

Address: 81100 Caserta (Italy)

City: Caserta

Country: Italy

Business or sector: Professional, scientific and technical activities

Design and implementation of an e-commerce website, with particular focus on the algorithmic and high-level problem-solving side.

Computer Science School Internship

Liceo Statale Alessandro Manzoni [01/10/2016 – 30/05/2018]

Address: Via A. De Gasperi , 46, 81100 Caserta (Italy)

City: Caserta

Country: Italy

Website: <https://www.liceomanzonicaserta.edu.it/>

Email address: cepm010008@istruzione.it

Name of unit or department: Linux User Group Manzoni (LUG Manzoni) - **Business or sector:** Professional, scientific and technical activities

Technical advising about the use of the Linux operating system, in order to improve the skills of the institute's Linux User Group (LUG).

EDUCATION AND TRAINING

Computer Science Master Degree

Università degli Studi di Salerno [01/10/2021 – Current]

Address: Via Giovanni Paolo II, 132, 84084 Fisciano (Italy)

Field(s) of study: Data Science & Machine Learning

Level in EQF: EQF level 7

Type of credits: ECTS – **Number of credits:** 117

Main advanced topics cover various types of neural networks (transformers, CNNs, RNNs, ...), computer vision and image processing, biometry, data analysis, inferential statistics, graph neural networks, advanced algorithms and optimization, learning methods, geometric topology and dimensionality reduction, multi-modal machine learning. Additionally, the program covers natural language processing techniques including language modeling, sentiment analysis, named entity recognition, and text classification, as well as reinforcement learning techniques such as Q-learning, policy gradients, and actor-critic methods. These skills encompass a range of abilities such as deep learning model design and training, feature extraction, transfer learning, data preprocessing, hyperparameter tuning, model evaluation, and ensemble learning techniques.

Number of ECTS Obtained: 61/180; **Grade Average:** 30/30; **Graduation Date:** N/A; **Final Grade:** N/A

Computer Science Degree

Università degli Studi di Salerno [16/09/2018 – 30/09/2021]

Address: Via Giovanni Paolo II, 132, 84084 Fisciano (Italy)

Website: <https://www.unisa.it/>

Field(s) of study: Computer Science

Final grade: 110 cum laude (4.0 G.P.A.) – **Level in EQF:** EQF level 6

Type of credits: ECTS – **Number of credits:** 180

Thesis: Blockchain with negotiation-based consensus

Main topics and acquired skills include: proficiency in programming at both low and high levels, problem-solving abilities, implementation and usage of data structures, object-oriented programming, enterprise programming, and database design and implementation. The individual should also possess theoretical and practical knowledge in data structures and algorithm design and analysis, operating systems, web design, networking protocols, software engineering, discrete and continuum mathematics, artificial intelligence, operational research, numerical calculation, and theoretical computer science. These skills encompass a range of abilities such as computational complexity analysis, proofs of correctness, memory management, process management, file systems, use of E-R and relational models, SQL, front-end/back-end technologies, and understanding of various learning models, optimization algorithms, and formal languages.

Number of ECTS Obtained: 180/180; **Grade Average:** 30/30; **Graduation Date:** 30/09/2021; **Final Grade:** 110/110 cum laude (4.0 G.P.A.)

High School Leaving Qualification in Scientific Studies

Liceo Statale Alessandro Manzoni

Address: Via A. De Gasperi, 46, 81100 Caserta (Italy)

Website: <https://www.liceomanzonicaserta.edu.it/>

Final grade: 96/100 – **Level in EQF:** EQF level 4

LANGUAGE SKILLS

Mother tongue(s): **Italian**

Other language(s):

English

LISTENING C1 READING C1 WRITING C1

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

DIGITAL SKILLS

Microsoft Office (Excellent) / Draw.io (Good) / Eclipse IDE (Good) / PyCharm IDE (Good) / Linux OS (Good) / Dev C++ (Good) / IntelliJ IDEA (Good) / Jupyter Notebooks (Good)

Programming Languages, Frameworks, APIs and Technologies

Scikit-Learn (Excellent) / Graphein (Good) / JAVA (Java SE, Java EE, EJB, JSP, Servlets, JDBC) (Excellent) / Matlab (Good) / Pandas (Good) / JUnit (Good) / TensorFlow (Good) / NetworkX (Good) / GitHub (Good) / PyTorch Geometric (Good) / C (Excellent) / SQL (Excellent) / JavaScript (Good) / MySQL (Excellent) / Design Patterns (Good) / PyTorch (Good) / Python (Excellent) / PHP (Good) / JEP (Java Embedded Python) (Good) / HTML5 (Good) / Keras (Good) / Flask (Good) / NumPy (Excellent) / Torchvision (Good) / OpenCV (Good)

PROJECTS

DNN-HMM

[28/03/2022 – Current]

Hybrid deep learning system for speaker identification, combining an LSTM-CNN neural network and Hidden-Markov-Models (HMMs) to empower the recognition capabilities (GitHub [link](#)).

Protein-Reconstruction

[30/10/2022 – Current]

A Graph Neural Network (GNN)-based system for protein structural rearrangement classification trained with a large database consisting in AlphaFold-generated protein 3D structures (GitHub [link](#)).

De-Trains

[14/02/2022 – 03/08/2022]

A NoSQL and blockchain-based application for selling train tickets using Solidity smart contracts (GitHub [link](#)).

GameHub

[30/11/2020 – 03/02/2021]

An videogame e-commerce webapp featuring a machine learning-based recommendation system perfectly integrated in the Java environment through several design patterns (GitHub [link](#)).

COMMUNICATION AND INTERPERSONAL SKILLS

Soft Skills

In addition to my technical skills, I possess several valuable soft skills that enable me to contribute effectively to a team. I prioritize teamwork and am capable of critical thinking and decision-making. My strong analytical skills give me the ability to learn, listen, and decipher intricate information, while still being able to communicate effectively and convey technical concepts clearly and concisely. Furthermore, I am highly motivated and enthusiastic, always looking for opportunities to learn and grow.

I hereby authorize the use of my personal data in accordance to the GDPR 679/16 - "European regulation on the protection of personal data".

13/04/2023



Andrea Terlizzi