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EMANUELE DI LUZIO

COMPUTER ENGINEERING AND ARTIFICIAL INTELLIGENCE STUDENT

ACADEMIC BACKGROUND	University of Modena and Reggio Emilia	Modena, Italy
	<i>Master's Degree in Artificial Intelligence Engineering</i>	2023 - Present
	<ul style="list-style-type: none">• In-depth study of the most advanced techniques in Artificial Intelligence, with a particular focus on Machine Learning, Deep Learning, and their practical applications in various technological domains.• Execution of practical projects that include the application of AI in fields such as Computer Vision, Natural Language Processing (NLP), and other emerging areas.• Hands-on experience with advanced tools such as TensorFlow, PyTorch, and other frameworks for the development, training, and evaluation of complex neural network models.• Study of optimization techniques and advanced network architectures such as Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), and Transformers to improve AI model performance.	
	Alma Mater Studiorum - University of Bologna	Bologna, Italy
	<i>Bachelor's Degree in Computer Engineering</i>	2020 - 2023
	<ul style="list-style-type: none">• Theoretical and practical training on computing system architectures, including parallel and distributed architectures, with particular attention to optimizing computational performance.• Development of complex algorithms to solve advanced problems in data processing contexts, with applications in fields such as big data analysis and image processing.• Experience in advanced programming with languages such as Java and C, with particular emphasis on object-oriented programming paradigms and efficient data structures.	
	Liceo Scientifico Filippo Masci	Pescara, Italy
	<i>Scientific High School Diploma</i>	2015 - 2020
	<ul style="list-style-type: none">• Solid training in basic scientific subjects, with a strong focus on mathematics, physics, and computer science, preparing for advanced university studies in engineering.• Development of logical and analytical skills applied to solving complex problems, with particular attention to mathematical modeling and theoretical physics.	

Air Pollution Prediction

University of Modena and Reggio Emilia

January 2023 - Present

- Development of an AI model for predicting air quality, using a combination of satellite data from the European Space Agency's Sentinel-2 and Sentinel-5P missions.
- The workflow pipeline includes the acquisition and preprocessing of satellite images, extraction of relevant atmospheric data, and subsequent modeling using a Convolutional Neural Network (CNN) based on the ResNet architecture.
- Model performance evaluation using metrics such as Mean Squared Error (MSE), with a detailed comparison against existing benchmarks to validate its effectiveness and efficiency.
- Study and implementation of optimization techniques to improve the model's predictive capabilities, with particular attention to reducing prediction errors and enhancing the model's generalization.

Tracciamento delle Tecnologie Emergenti con Neo4j e BERT utilizzando i dati di arXiv

University of Modena and Reggio Emilia

July 2024

- Exploration of dynamic Knowledge Graphs to track the evolution of emerging technologies by integrating data from arXiv using Neo4j and BERT.
- Initial use of BabelNet for semantic enrichment was replaced by WordNet and later BERT, achieving better semantic similarity between papers.
- Implementation included data collection via the arXiv API, import into Neo4j, and advanced semantic analysis using BERT to improve trend identification and collaboration mapping.
- The project demonstrated significant improvements in the accuracy and relevance of technology trend predictions by using deep learning techniques compared to traditional methods.

- PROFESSIONAL EXPERIENCE**
- Co-Founder and CTO** | Stunbrand, Start-up September 2023 - Present
- Responsible for designing and developing the technological architecture of the startup's logistics platform, ensuring a scalable and secure infrastructure to support business growth.
 - Initially responsible for the complete development of the corporate website using modern technologies such as React.js and Node.js; later, led the transition to Shopify, creating a custom template and additional HTML code to enhance user experience and site functionality.
 - Integration of third-party services, including payment systems and shipping management, ensuring compatibility and data security throughout the e-commerce process.
- Web Developer (Part-time)** | ASCOM Imola April 2023 - June 2023
- Developed and implemented a custom Customer Relationship Management (CRM) system designed to improve customer relationship management, hosted on a Linux server optimized for security and efficiency.
 - Integrated with the WhatsApp Business API to automate customer interactions, reducing response times and improving the effectiveness of business communications.
- Web Developer** | Vivaio Asso di Fiori 2022
- Designed and developed a static website used for promoting business services, with a particular focus on search engine optimization (SEO) and responsive design for mobile devices.
 - Implemented contact forms and other interactive features to improve site accessibility and ease of use, increasing user engagement and lead conversion.
- Digital Menu Design** | Ristorante Pizzeria La Fontana 2021
- Designed and implemented an interactive digital menu system, accessible via QR code, integrated with the restaurant's website to allow autonomous and real-time content updates.
 - Focused on system usability and accessibility, optimizing the interface for mobile devices and enhancing the user experience during interaction with the digital menu.

TECHNICAL SKILLS

Programming Languages: Advanced knowledge of C, Java, Python, JavaScript, SQL, with practical experience in solving complex problems and implementing optimized solutions.

Frameworks and Libraries: Significant experience with frameworks such as TensorFlow and PyTorch for deep learning model development; expertise in front-end development with React.js and back-end with Node.js.

Tools: Expert use of development tools such as Git, Visual Studio Code, IntelliJ IDEA, and software for creating and managing continuous development pipelines.

Operating Systems: Familiarity with various operating systems including Windows, several Linux distributions (Ubuntu, CentOS), and macOS, with skills in managing development environments on each platform.

Web Development: Advanced skills in HTML5, CSS3, JavaScript, Node.js, Express.js, and the use of platforms like Shopify for developing customized e-commerce solutions.

Graphic and Video Editing: Advanced skills in using Adobe Photoshop and Premiere for image manipulation and video editing; experience with Blender for creating 3D graphics.

Musical Skills: Excellent musical abilities, with orchestral experience as a cellist and in-depth knowledge of music production software such as Logic Pro X.