SIMONE BARTOLI

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SUMMARY

I am a computer science passionate with a master degree in computer science engineering at the University of Bologna. I have orientated my studies towards the field of Artificial Intelligence, mainly focusing in Machine Learning, Computer Vision and Image Processing.
I have been programming since High School and I have taken part in many different projects, starting from low level programmation to Object-oriented and Component-oriented programming.

EDUCATION

University of Bologna Sept. 2018 - Mar. 2021
Master degree Computer Engineering 2021
Master degree focused on Artificial Intelligence and Computer Vision. In particular, I attended courses of Artificial Intelligence, Intelligent systems, Computer Vision, Image Processing, Machine Learning and Computer Graphics. During these years I growth a deep passion for Computer Vision and Image Processing projects, which led me to choose Computer Vision as the topic for my master thesis project.
Final mark: 110/110 cum laude
Thesis: Deploying deep learning for 3D reconstruction from monocular video sequences

Universitat Politecnica de Valencia Jan. 2019 - July 2019
Master degree Informatics Engineering
A 6 months Erasmus+ exchange.

University of Bologna Sept. 2015 - Oct. 2018
Bachelor degree Computer Engineering 2018
Final mark: 107/110

EMPLOYMENT

Zuru Tech, *Machine Learning & Computer Vision Software Engineer*, Modena Jan. 2023 - Current
As an R&D Software Engineer I am responsible for researching, implementing and deploying Machine Learning and Computer Vision solutions based on State Of The Art technology papers. The job requires a strong knowledge of the C++ language as well as a good expertise in Python. The main activities involve the use of GenerativeAI approaches such as GAN, VAE, Transformers and LLMs to develop a Text-To-BIM application. Most of the work is carried out exploiting Tensorflow, PyTorch, HuggingFace and OpenCV as external libraries and GitLab as CI/CD version control system.

C++ & Unreal Engine Software Engineer, Modena July 2021 - Dec. 2022
As a C++ Software Engineer, I was responsible of developing new features within an innovative BIM (Building Information Modeling) software, using Unreal Engine as 3D framework. My goal was to provide optimized, scalable, reusable and modular solutions, exploiting software engineer design patterns and principles. I worked on a Agile/Scrum team using GitLab as CI/CD version control systems.

Cluster Reply, *IT Consultant*, Bologna May 2021 - June 2021
A full time job focused on using Microsoft technologies to manage and carry out web applications based on clients needs. The main technologies exploited for this job are the ASP.NET framework (Using C# as programming language) and Microsoft SQL Server (Using SQL and Transact-SQL).

Eyecan.ai, *Machine Learning & Computer Vision Software Engineer Intern*, Bologna Sept. 2020 - Mar. 2021
Internship for the final Master thesis.
The main project carried out during this experience is about deploying Deep Learning for 3D reconstruction from monocular video sequences. The aim of this project is to compare the Structure from Motion + Multi-View Stereo pipeline with an innovative Data-driven technique which exploits Convolutional Neural Networks for monocular depth estimation. The implementation has been written in Python exploiting the PyTorch and PyTorch-Lightning libraries.
The second project concerns the implementation of a Python library in order to interact with a Zivid 3D sensor with the aim of gathering accurate RGB and Depth images.

SKILLS

LANGUAGES: Italian: native, English: professional knowledge, IELTS certification: overall 6.5, Spanish: professional knowledge

PROJECTS

FloorPlan suite Jan. 2024 - Current
The FloorPlan suite is a collection of internal tools realized for Zuru Tech with the aim of creating a huge Machine Learning dataset containing only house projects with a good design. The tools I have worked on are mainly two: ScraperPlan and TinderPlan. The former is a full-stack PWA (Progessive Web App) that scrapes house projects from real-estate platforms. The latter is a full-stack PWA too, that allows internal architectural experts to filter out bad house projects from the scraped dataset. Both the projects have been implemented with React.js for the frontend and Python Flask for the backend.

Computer Vision and AR Feb. 2020 - June 2020
For the Computer Vision exam, I have taken part of a team for the realization of an Augmented Reality project. The aim was about superimposing an Augmented Reality layer over a detected object in the scene. The project has been developed using the Python programming language. (in particular the OpenCV and Numpy libraries).

ArtigianAudio App Feb. 2020 - Current
ArtigianAudio is a Mobile App realized using the Unity Framework and the Google AR Core library.
The aim is to place Hi-Fi rack furnitures within an Augmented Reality scene. In doing so, the customers will be able to see how does the rack fit in their own rooms. Moreover, it will be possible to build up personal racks by componing different pieces together.

ArtigianAudio Jan. 2019 - Current
Starting from scratch, I have designed and developed a responsive e-commerce website for Bartoli&Sassetti s.a.s.
In order to develop and manage the software I have been using web technologies as PHP, HTML, CSS, JS, JQuery and MySQL for the storage of Data.
Website: https://www.artigianaudio.it

Other projects (https://simo6.github.io/?/#Portfolio)