Luca **De Menego**

Backend · Web · Mobile

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Work Experience

Thema Optical

Domegge di Cadore, BL, IT

Full-stack & Mobile Developer

*Jul. 2020 - **Current***

- Developed Web Applications in Vue.js, mainly e-commerce based and powered by Three.js.
- Worked with Yii2, a framework consisting of a Model-View-Controller paradigm used to handle both backend and frontend.
- Developed Flutter applications for iOS and Android for a B2B and B2C business model, based on an Augmented Reality experience.
- Worked with Augmented Reality frameworks for building Virtual-try-on experiences, namely ARKit, ARCore and Mediapipe.
- Managed a Google Cloud Platform infrastructure, consisting of MySQL databases, Virtual Machines and Cloud Run Docker Containers.
- Managed domains and DNS records.
- Managed NGINX web servers, configured virtual hosts and SSL/TLS certificates.
- Developed Bash Scripts and Windows Forms in C#.

SpazioDati

Trento, TN, IT

Backend Developer Internship

Feb. 2021 - May. 2021

- Developed a notification center in Go, based on the gRPC framework and powered by Firebase Cloud Messaging.
- Built and deployed a serverless infrastructure utilizing AWS Lambda and AWS DynamoDB, focusing on high-availability, fault tolerance, and auto-scaling.
- Integrated a monitoring system based on OpenTelemetry, gathering logs, metrics and employing distributed tracing. Exported gathered information in Sentry, AWS X-Ray and Prometheus.
- Developed a minimal frontend component in React.

Demenego

Calalzo di Cadore, BL, IT

Office Worker

2017 - 2019, summer period

- Checked transport documents and invoices, and their synchronization with software.
- Documents archiving.

Skills

Languages Italian (native) · English (B2 Advanced)

Programming Languages JS/TS · Java · Python · C++ · C# · Go

Backend NGINX · Node.js · Express.js · MySQL · MongoDB

Frontend Vue.js · Svelte · TailwindCSS · Angular

Mobile Flutter · Dart

Others Git · Linux · Docker · PyTorch · GCP · K8s · Figma

Education

UniTN (University of Trento)

Trento, TN, IT

Master's degree in Computer Science

Sep. 2021 - Current

- Current average: 30/30

UniTN (University of Trento)

Trento, TN, IT

Bachelor's degree in Computer Science

Sep. 2018 - Jul. 2021

- Grade: 110 cum laude
- Got a Scholarship from "La Magnifica Comunità di Cadore".

E. Fermi (Scientific High School)

Pieve di Cadore, BL, IT

High School Diploma

Sep. 2013 - Jul. 2018

- Grade: 100/100
- Got a Scholarship from Protti's foundation.

Personal Projects

Interactive Code Playgrounds

Svelte, JS/TS, npm

Computer Science Education — *@lucademenego99/icp-bundle*

- ICPs are web pages displayed as slides that include a frontend component enabling code execution and code output display, created to enhance Computer Science classes by making them more interactive and based on *fast tinkering*.
- Being entirely based on JS and WASM, code execution happens client-side, with no need for an external backend server. The currently available languages are: Python, Java, Javascript, Typescript, C++, Processing, StandardML, SQL, p5.js.
- Part of this project was co-financed by the European Commission in the framework of the Erasmus+ OpenU project.

Unsupervised Domain Adaptation

Python, PyTorch

Deep Learning — *@lucademenego99/uda*

- This project contains a collection of methods concerning unsupervised domain adaptation techniques.
- Among the exploited techniques, a customized implementation of the state-of-the-art MEDM network architecture has been developed, which lead to a nearly optimal domain adaptation with a difference in terms of accuracy of 5% between the solution and the upper bound.

Multilevel Distributed Cache Architecture

Java, Akka

Distributed Systems — *@lucademenego99/multilevel-cache*

- Implementation of a distributed multi-level cache protocol that guarantees client-centric consistency in an environment in which caches may fail by crashing.
- The JUnit testing framework has been employed to automatically check whether the system maintains a consistent state under various settings.

Enterprise JavaBeans application

EJB, Hibernate, Wildfly, H2

Web Architectures — *@lucademenego99/studs-search*

- Enterprise JavaBeans sample application exploiting WildFly, Hibernate, Java Servlets and an H2 database. Thanks to an in-depth object-relational mapping, classes are automatically mapped to database entities, and data is lazily fetched when needed.
- DTOs, a Service Locator and Business Delegates have been used to ease the backend-frontend communication.

Evader-Pursuer game

C++, ROS

Applied Robotics — *@lucademenego99/evader-and-pursuer*

- Calculate collision-free Dubins shortest paths, used to move robots in an arena filled with obstacles.
- The solution solves the multipoint Markov-Dubins problem with an iterative dynamic programming approach, with a complexity of $O(nk^2)$, being n the number of points and k the number of discretized angles.
- A visibility graph is generated following the plane-sweep principle, leading to a final complexity of $O(nlogn)$, with n being the number of vertices.

On-demand SDN slicing

Python, Ryu, MiniNet

Software Defined Networking — *@lucademenego99/on-demand-sdn-slices*

- Implement an SDN slicing approach to enable dynamic activation and de-activation of network slices, enabling users to identify topology, flows and QoS configurations via bandwidth limiting.
- Give access to a web application built with D3.js providing all main functionalities exposed by the backend.