LEONARDO **VICENTINI**

Software Engineer

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"Learning never exhausts the Mind." — Leonardo da Vinci

Summary

Master's degree student in Computer Science excited to begin his thesis work on Cloud FinOps as the final step toward completion of studies. Curious about cloud-native solutions and system design in general. Interested in experimenting with and learning about cutting-edge technologies, tools, and paradigms.

Skills

Programming Python, Java, JavaScript, C
Technologies SQL (MySQL, PostgreSQL), MongoDB, Elasticsearch, GraphQL, Node.js, NGINX, Bash, Git, Docker, Kubernetes
Languages Italian (native), English

Education

Master's degree in Computer Science - Software and Service Architectures

Trento, Italy

University of Trento — *Sep. 2021 — Expected Dec. 2023*

- Current grade point average: 29.89/30
- Relevant courses: Distributed Systems, Cloud Computing, Web Architectures, Security Testing, Blockchain, Data Mining, HPC

Bachelor's degree in Computer Science

Trento, Italy

University of Trento — *Sep. 2018 — Sep. 2021*

- Grade: 106/110
- Relevant courses: Algorithms & Data Structures, Software Engineering, Operating Systems, Databases, Networks, ML

Work Experience

FIPIC – Italian Wheelchair Basketball Federation

Rome, Italy (Remote)

Software Engineer Intern - Backend — *Feb. 2021 — Jun. 2021*

- Co-led a team of 4 for the creation of a historical data and multimedia archive of the Federation, reducing the estimated project completion time by 50% through the adoption of a customer-centered development.
- Gathered functional and non-functional requirements from different technical and non-technical stakeholders in order to design a system consisting of multiple components.
- Contributed in the design of a pipeline based on the ELK stack to achieve dynamic data visualization and in-depth analysis.
- Designed and implemented RESTful APIs to perform CRUD operations against a MySQL database using Node.js with Express.
- Created a multimedia collector component by leveraging Google Drive APIs and OAuth 2.0 authentication.
- Deployed and configured the entire system on a dedicated Ubuntu server using NGINX, UFW and PM2.

Projects

Digital watermarking tool

Python (OpenCV, NumPy)

Team Leader - Software Engineer — *Oct. 2022 — Nov. 2022*

- Developed a DWT-SVD-based digital watermarking suite as part of a university competition on multimedia data security.
- Proposed the project workflow in order to meet the functional requirements of the produced code within the restricted time constraints imposed by the competition rules.
- Analyzed literature related to SOTA watermarking techniques and devised algorithms to achieve a robust and invisible watermark embedding that resulted the second best in the competition in both metrics.
- Exploited cloud services (IaaS) to parallelize the attack algorithm against other teams' watermarked images, reducing the computation time by 33% attacking 10 groups out of 10 with a success rate of 93.3% for the 30 images involved.

Convex hull parallel solver

C (MPI, OpenMP)

Software Engineer — *Nov. 2022 — Dec. 2022*

- Ported a C++ implementation of a serial algorithm solving convex hull problem into C source code.
- Designed and implemented a parallel algorithm exploiting MPI and OpenMP libraries.
- Submitted jobs on the HPC cluster @UniTrento with shell scripts exploiting different PBS configurations to find the best performance of the parallel implementation.
- Tested parallel implementation on various input sizes and compared results to serial implementation, finding improved performance in terms of speedup and efficiency.