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, Solidity
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: 30/30
- 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.