# DOMIZIANO SCARCELLI

Software Engineer

📅 18/01/2000

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## SUMMARY

Passionate **Software Engineer** specializing in **Deep Learning**, with a strong interest in **Web Development** and **Cloud Computing**. Committed to continuous learning and driven by the desire to explore new technologies and ideas.

## SKILLS

**Languages:** Python, Typescript, Java, HTML, CSS, SQL, Swift.

**Technologies:** Git, Docker, AWS, PySpark, PyTorch, React, Express, Prisma, Tailwind, React Native, Terraform.

## EDUCATION

| | | |
|---|---|---|
| 9/2022 - *3/2025* | **Master's Degree in Computer Science (in English)**<br>Mark: 110 / 110 cum laude | **University of Rome La Sapienza** |
| 9/2018 - 3/2022 | **Bachelor's Degree in Computer Science**<br>Mark: 104 / 110 | **University of Rome La Sapienza** |

## SELECTED PROJECTS

**Cloud Computing** — **VoiceFork**   github.com/DomizianoScarcelli/voicefork
Developed a mobile app replicating **TheFork** using **React Native** for the frontend and a microservices-based backend with **Express** and **FastAPI**. Deployed on **AWS** using **Docker**, **ECS with Fargate**, and infrastructure managed via **Terraform**. Ensured scalability with **k6** load testing.

**Explainable AI** — **Counterfactual Explanations for SRSs**   github.com/DomizianoScarcelli/counterfactual-explanations-recsys
Conducted as my **Master's thesis**, this research proposed novel counterfactual explanation methods for **Sequential Recommender Systems** (SRSs) to improve interpretability. Developed a **genetic algorithm** for minimal sequence modifications and an **automata learning** approach for interpretable surrogate modeling. Evaluated techniques on **MovieLens 100K and 1M** datasets, demonstrating high model fidelity and actionable explanations.

**Deep Learning** — **Multi-Latent Autoregressive Source Separation**   github.com/DomizianoScarcelli/mlass
Extended the **Latent Autoregressive Source Separation** method by Postolache et al. by integrating **belief propagation** over a factor graph and a **probabilistic extractor**. Enabled separation of multiple sources with reduced memory complexity.

**Deep Learning** — **Skin Lesion Classification**   github.com/DomizianoScarcelli/skin-lesion-classification
Built deep learning models to classify 7 skin lesion types from the **HAM10K** dataset. Used **PyTorch**, **Style-GAN** for synthetic data generation, and **SAM** for image segmentation. Evaluated and optimized **CNN** and **ViT**-based models.

**Big Data** — **Spotify Million Playlist Challenge**   github.com/DomizianoScarcelli/spotify-recommender
Implemented and compared three recommender system approaches using **PySpark** on a dataset of 100K playlists and 600K songs. Reproduced and optimized the 2nd-place solution from the challenge by converting it from TensorFlow to **PyTorch** and utilizing **Petastorm** for efficient data loading.

## EXPERIENCE

**4/2022 – 5/2024**   **Private Lessons**   **Autonomous**
- Provided private lessons on **Python**, **SQL**, and **Database Design** to both University and High School students.

**9/2021 – 3/2022**   **Internship at Gamification Lab**   **Gamification Lab, La Sapienza**
- Worked for 3 months in a **team of 4 people** for the development of an **Android Application** called **Generocity** that allows the users to find a parking spot.
- My job was to **design** and **code** some parts of the UI, interacting also with a team member on the **backend** to integrate it with the frontend. All the work was done inside **Android Studio** using **Java**.

## LANGUAGES

**English** - B2, **Italian** - native

## SELECTED COURSES

**Deep Learning and Applied AI** - 30L/30, **Big Data** - 30L/30, **Distributed Systems** - 30/30