

# GIACOMO MARCIANI

SENIOR SOFTWARE ENGINEER @ Amazon Web Services  
Building High Performance Computing in the Cloud



## LOCATION

Boston, MA, United States

## CONTACTS

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gmarciani (LinkedIn)  
gmarciani (GitHub)

## INTRODUCTION

I am a Senior Software Engineer with 8+ years at AWS, specializing in High Performance Computing in cloud environments and large-scale infrastructure automation. I own the full lifecycle end-to-end: strategy, design, implementation, DevOps, and on-call operations, with experience leading technical teams and shaping product direction.

I have contributed to AWS ParallelCluster, NICE EnginFrame, Elastic Graphics, and Elastic Inference. My background spans software engineering, distributed systems and big data. Before AWS, I founded the first ACM Student Chapter in Rome, co-founded a startup, and taught computer science at university. I also led research projects that resulted in publications in scientific journals and presentations at international conferences.

What makes me effective as an engineer and a leader is a relentless curiosity; a drive to keep improving how I build, how I lead, and how I show up for my team.

## WORK EXPERIENCE

### Sr Software Engineer

Amazon Web Services, 2021-Present

Technical leader of AWS ParallelCluster. My responsibilities span the software lifecycle end-to-end: strategy, design, implementation, observability, on-call incident response, mentoring, and hiring.

### Software Engineer II

Amazon Web Services, 2019-2021

Worked on Elastic Graphics, Elastic Inference, and NICE EnginFrame. On EnginFrame, I contributed mainly to the build system, CI/CD automation, and integration work to enable the portal to interact with both on-premises and cloud-based clusters. Starting in 2021, I took on AWS ParallelCluster, where I became the team's de facto technical leader. My key contributions include Multi-User environment, Dynamic File System Mounting, support for GPU-intensive instance types, enabling ParallelCluster in US isolated regions, Terraform integration, ParallelCluster UI, serving as Security Guardian, driving roadmap and releases, and resolving high-severity escalations for key customers. I also led the complex shutdown of Elastic Graphics and Elastic Inference, navigating deep integrations with EC2/ECS.

### Software Engineer I

Amazon Web Services, 2018-2019

Worked on Elastic Graphics and Elastic Inference, which attached cost-effective GPU acceleration to EC2 instances and other AWS services. I contributed to the launch of Elastic Inference at Re:Invent 2018 and owned the metering and billing component for compute resources.

### R&D Intern

Accenture, 2017

Designed a solution for the elastic auto-scaling of containerized applications using Reinforcement Learning in Kubernetes.

### Chairman, Founder

ACM Rome Tor Vergata, 2016-2018

Founded the ACM Student Chapter at University of Rome Tor Vergata, the first in the city. Led the team and fostered connections between academia and industry.

### Teaching Assistant

University of Rome Tor Vergata, 2016-2018

Tutored undergraduate students and graded exams for Foundations of Computer Science and Algorithms Engineering.

### Mathematics Tutor

Freelance, 2011-2017

Gave private math lessons to secondary and high school students. Several of my students went on to study engineering.

### Management Engineer, Co-Founder

Sbaam.com, e-Commerce, 2011-2012

Co-founded the startup, making it a finalist in the InnovActionLab startups contest. Responsible for business plan development and investor pitches.

## MAIN PROJECTS

### AWS ParallelCluster and ParallelCluster UI

Amazon Web Services, 2021-Present | HPC

Open-source platform to automate deployment and lifecycle management of large-scale HPC clusters on AWS, with millions of dollars in revenue and major enterprise customers.

### NICE EnginFrame

Amazon Web Services, 2021 | HPC

Web application to submit HPC workloads to both on-premises and AWS clusters.

### AWS Elastic Graphics and Elastic Inference

Amazon Web Services, 2018-2023 | Web Service

Services to attach GPU-powered acceleration for OpenGL and ML workloads to EC2, ECS and Sagemaker to reduce the cost of running graphics and machine learning applications.

### Crime Graph

Big Data, IEEE FiCloud, 2017 | Java, Kafka, Flink, Neo4j

Data stream processing application for real-time analysis of evolving criminal networks, uncovering hidden and latent relationships.

### OntoQA

Artificial Intelligence, 2017 | NLP, Java, Protege

Question&Answer web application leveraging ontology-driven natural language processing.

### Godot

App for Transports, 2013 | Java, Android

Mobile app to address issues caused by illegal parking, leveraging QR codes and NFC.

*See more on my GitHub*

## PUBLICATIONS

### A data streaming approach to link mining in criminal networks

5th IEEE International Conference on Future IoT (FiCloud 2017)

### Real-time analysis of social networks leveraging Flink

10th ACM International Conference on Distributed and Event-Based Systems (DEBS 2016)

### Marciani Normal Form of context-free grammars

Arxiv (2016)

## EDUCATION

### MSc Software Engineering and Data Science

University of Rome Tor Vergata, 2015-2018

Grad Avg 29/30 - GPA 4/4 \*

### BSc Software Engineering

University of Rome Tor Vergata, 2011-2015

Grad 110/110 cum laude

### BSc Management Engineering

University of Rome Tor Vergata, 2009-2011

Interrupted

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## MAIN SKILLS

**Cloud** Amazon Web Services, Digital Ocean, Railway

**HPC** ParallelCluster, EnginFrame, Slurm, Nvidia GPUs, Cuda, MPI, Lustre, EFA

**Big Data** Flink, Hadoop Distributed File System, Hadoop MapReduce, Pig, Hive, Kafka, Flume, Elasticsearch, Kibana, Grafana, Kubernetes

**Web** Spring, Nginx, Tomcat, React, NodeJS, HTML, CSS, Sass, Postman, Hugo, Wordpress

**Automation** CloudFormation, Terraform, Chef

**Data** SQL, NoSQL, Graph, Caching

**Languages** Python (primary), Java, Kotlin, Ruby, Javascript, C, Cuda, Bash, HTML, OWL, SPARQL, AMPL, MIPS, Latex

**Platforms** Linux, OSX, Docker

**Applied Math** Matlab, AMPL, IBM Cplex

**Process** Agile, SCRUM

## HONOURS

### Lecturer at Master CESMA

University of Rome Tor Vergata, 2016

### Finalist at ACM DEBS Grand Challenge

10th ACM International Conference on Distributed Event Based Systems, 2016

### Speaker at InnovAction Lab Grand Challenge

LVenture Groups, 2013

### Best Student in Computer Architectures

University of Rome Tor Vergata, 2012

### Alumno of InnovAction Lab

LVenture Groups, 2011

### Counselor of Engineering

University of Rome Tor Vergata, 2010

## LANGUAGES

**Italian**

Native

**English**

Proficient