# Di Stefano **Alessandro**, PhD

Cloud-Native Software & Distributed Systems Engineer - Site reliability/Platform/DevOps Engineer

https://linkedin.com/in/aleskandro
mail@alessandrodistefano.eu | (+39) 388 145 23 41

## LINKS

https://github.com/aleskandro
https://linkedin.com/in/aleskandro

## LANGUAGES

Italian
English

## PROGRAMMING SKILLS

- GNU/Linux • Shell (Bash, Sh, Zsh)
- Docker • Kubernetes
- Red Hat Openshift
- Ansible • Vagrant
- Golang • Python • C/C++
- MySql • PostgreSQL
- Kafka • Prometheus
- Grafana • ELK
- Redis • MongoDB
- Html • CSS • JS

## EXPERIENCE

### RED HAT INC. | SENIOR SOFTWARE QUALITY ENGINEER
Aug 2021 – Now | Remote

- I'm leading the QE team in charge of the OpenShift on arm64 and multi-arch compute nodes enablement efforts;
- I'm leading the development of the multi-arch manager operator and co-authored its design and enhancement proposal;
- I'm supporting the design and implementation of the multi-arch compute nodes OpenShift-related features;
- I'm in charge of the porting of both the downstream and upstream QE test suites and CI automation to run with the arm64 offering of several cloud platforms (AWS, Azure, Bare Metal on-prem, ...), and on multi-arch compute nodes OpenShift clusters;
- I designed and maintain the internal infrastructure (network and automation software) to test ephemeral and concurrent OpenShift clusters on Bare Metal servers (on-prem data-centers);
- Open Source contributor in the upstream OKD project, currently focused on the enablement of OKD Streams, OKD on CentOS Stream CoreOS 9, and the Massachusets Open Cloud (MOC) Alliance OKD infrastructure;
- Technologies: Linux, Docker, Kubernetes, OpenShift, Golang, Jenkins, Prow;

### AUCTA COGNITIO | SOFTWARE ENGINEER
Aug 2020 – Jul 2021 | Scordia, CT - Italy

- Spearheaded the design and implementation of a cutting-edge prototype decision support system tailored for wind farm management.
- Conducted extensive research on key metrics, KPIs, and data visualization and designed the micro-services-based application leveraging Golang, Angular, Python, and Prometheus as a time-series warehouse for the data retrieved from the SCADA systems on the field.
- This led me to the development of an open-source prototype of a back-filler for Prometheus, useful to fill the historical dataset and perform the initial time-series analysis.
- Technologies: Linux, Kubernetes, Gitlab, Golang, Python, Angular, Kafka, Prometheus;

### MEDICOMMM | DEVOPS & SOFTWARE ENGINEER
Jan 2021 – Jul 2021 | Scordia, CT - Italy

- I was responsible for the migration of a monolithic platform to Google Cloud (Google Kubernetes Engine) and its re-design to use the micro-services patterns and architecture;
- Technologies: Linux, Kubernetes, Gitlab, Golang, Kafka, Elastic Search, MinIO; Prometheus;

### MADFARM | DEVOPS & SOFTWARE ENGINEER
Oct 2015 – Dec 2020 | Scordia, CT - Italy

- I joined as a full-stack web developer. I led the DevOps enablement for customers' scenarios and internally;
- I was responsible for the design of customers solutions and led the developers team;
- Technologies: Linux, Docker, Gitlab, Kubernetes/OKD, Python, Django, Ruby; ELK; Kafka

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## EDUCATION

### UNIVERSITY OF CATANIA, ITALY

2021 | PhD in Distributed and Parallel Computing
Thesis: AIOps: communication-aware management of SLAs for Cloud-Native Applications.

2018 | Master's degree in Computer engineering (110/110 with honors)
Thesis: Raphtory: building distributed online graph processing system.

2016 | Bachelor's degree in Computer engineering (110/110)
Thesis: ONOS and JFlowLight. Quality of Service Management for Software Defined Networking.

## RESEARCH

### QUEEN MARY UNIVERSITY OF LONDON | Research Engineer

Mar 2018 - Sep 2018 | London - United Kingdom

- I worked in the team responsible for Raphtory, an Open Source distributed streaming graph processing middleware system;
- I designed and developed in Scala some components of Raphtory: Interfaces/Traits for the Spouts, implementations of the distributed partitions manager with a focus on concurrent data-structures and their behavior, implementations of the live analysis manager based on the bulk synchronous parallel pattern.

## PUBLICATIONS

### MORA ON THE EDGE: A TESTBED OF MULTIPLE OPTION RESOURCE ALLOCATION

Wendlasida Ouedraogo, A. Araldo, Al. Di Stefano, An. Di Stefano
2022 IEEE 11th International Conference on Cloud Networking (CloudNet)

### IMPROVING QOS THROUGH NETWORK ISOLATION IN PAAS

Al. Di Stefano, An. Di Stefano, G. Morana
Elsevier - Future Generation Computer Systems - Volume 131, June 2022, Pages 91-105

### PROMETHEUS AND AIOPS FOR THE ORCHESTRATION OF CLOUD-NATIVE APPLICATIONS IN ANANKE

A. Araldo, Al. Di Stefano, An. Di Stefano
2021 IEEE 30th International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)

### EDGEMORE: IMPROVING RESOURCE ALLOCATION WITH MULTIPLE OPTIONS FROM TENANTS

A. Araldo, Al. Di Stefano, An. Di Stefano
IEEE Consumer Communications & Networking Conference (CCNC), Las Vegas (USA) 2020

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- Redis • MongoDB
- Html • CSS • JS

## RESOURCE ALLOCATION FOR EDGE COMPUTING WITH MULTIPLE TENANT CONFIGURATIONS

A. Araldo, Al. Di Stefano, An. Di Stefano

Proceedings of the 35th ACM/SIGAPP Symposium on Applied Computing, Brno, Czech Republic 2020

## ANANKE: A FRAMEWORK FOR CLOUD-NATIVE APPLICATIONS SMART ORCHESTRATION

Al. Di Stefano, An. Di Stefano, G. Morana

2020 IEEE 29th International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)

## SCHEDULING COMMUNICATION-INTENSIVE APPLICATIONS ON MESOS

Al. Di Stefano, An. Di Stefano, G. Morana

International Journal of Grid and Utility Computing (IJGUC), 2019

## COOPE4M: A DEPLOYMENT FRAMEWORK FOR COMMUNICATION-INTENSIVE APPLICATIONS ON MESOS

Al. Di Stefano, An. Di Stefano, G. Morana, D. Zito

2018 IEEE 27th International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises (WETICE)

## BUILDING DISTRIBUTED TEMPORAL GRAPHS FROM EVENT STREAMS

Benjamin A Steer, Alessandro Di Stefano, Richard G Clegg, Felix Cuadrado

2018 Second Workshop on Advances in Mining Large-Scale Time Dependent Graphs (TD-LSG)

## CERTIFICATIONS

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|---|---|---|---|
| 2009 | Istituto musicale V. Bellini | \| | Degree in music theory |
| 2016 | Angular.JS certificate | \| | Student at DIEEI (University of Catania) course |

## SOCIETIES

| | |
|---|---|
| 2000-2010 | Scout in the Italian "Agesci" association |
| 2008-2011 | Co-founder of Scordia Linux User Group |
| 2008-2017 | Hacktivist at Catania Gnu/Linux User Group |
| 2008-2017 | Hacktivist at Freaknet Medialab |
| 2012-2017 | Scoutmaster in the Italian "Agesci" association of Scordia (CT) |
| 2016 | Volunteer at MOCA Olografix Camp Hackmeeting |