

# FRANCESCO CHEINASSO

## Computer engineer

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Torino, TO (10144)



## EXPERIENCE

### Software Engineer - Liqo developer

#### ArubaKube S.r.l.

February 2023 - Ongoing

Torino, TO

I'm working as a software engineer in ArubaKube, Aruba's center of excellence for research, development, and innovation on Cloud Native technologies and open source projects, with a particular focus on Kubernetes. In particular, I'm a developer and architect for Liqo.io, an open-source project born in the Polytechnic of Turin, which allows the enabling of multi-cluster topologies in Kubernetes. I focused on:

- The **network module of Liqo**, which has been redesigned from scratch. This includes the design of a new modular network architecture and an implementation based on **Kubernetes controllers** and **CRDs**.
- The **CI/CD pipelines**. In particular, I took part in the design of the new pipeline of integration tests. We used **GitHub Actions Runner Controller (ARC)** and **ClusterAPI** (to automatize the creation of true clusters using kubvirt).
- Cloud Providers**. Since Liqo is also a **multicloud** tool (compatible with different Kubernetes services), I could improve my skills and knowledge about these services (especially from a network perspective).

### Kubernetes Developer & Cloud Network Designer

#### Liqo.io (Thesis)

March 2022 - February 2023

Turin, TO

In my thesis I worked for Liqo.io, a project born in the Polytechnic of Turin, which allows to enable multi-cluster topologies in Kubernetes. During the thesis, my main tasks have been:

- Redefine Liqo network for a multi-cluster environment, with minimum dependencies. A **POC** has been implemented using **Linux Network Namespaces**, **IpTables**, and **Policy Routing**.
- Develop a mechanism to check cross-cluster network connectivity in real time. This has been implemented inside a **Kubernetes operator** with **controller-runtime** and **kubebuilder** framework, using **Go** language.
- Allow Liqo monitoring for cross-cluster network using **Prometheus** and **Grafana**.
- Extend **Liqoctl** (the Liqo CLI tool) to show status information about a Liqo installation and connected clusters. **Go** language and **Cobra** have been used.

### Kubernetes Developer

#### Crownlabs

September 2021 - April 2022

Torino, TO

Crownlabs is a platform developed in the Polytechnic of Turin, it allows to run **GUI applications as a service** in a **Kubernetes** environment using a **Web Frontend**. During the project my main tasks have been:

- Implement a solution to add, deploy and manage generic applications in Crownlabs. **Golang** and **controller-runtime** have been used to implement those features inside a **Kubernetes operator**.
- test developed features using **GinkGo** framework.
- package **VSCode Server** and **Jupyter Notebook** in a **Docker** container to provide Demo applications to show the developed features.

## LANGUAGES

English

First: B2



## TECHNICAL SKILLS

### Languages

Shell Scripting Bash C/C++ Python  
Java Kotlin Javascript/Typescript Matlab

### Cloud

Kubernetes Helm Docker Golang  
Prometheus Grafana ArgoCD ArgoWorkflow  
VCluster Cluster API

### Frontend

React.js Bootstrap Ant Design Tailwind

### Backend

Spring Gin Kafka MQTT GraphQL  
SQL

### System and CI/CD

Linux Networking Nftables Iptables  
Policy Routing Git Github Github Actions

## SOFT SKILLS

Team work Positive Curious  
Communicative Autonomous  
Helpful Empath

## JOBS

### Warehouse worker

#### Selebo Falegnameria Sas

Jul 2016 - Aug 2016 Sanfront, CN

### Software Engineer

#### ArubaKube S.r.l.

Feb 2023 - Ongoing Torino, TO

## EDUCATION

### Master's degree in Computer Science

#### Polytechnic of Turin

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## Frontend Developer

### Crownlabs

📅 May 2021 – April 2022

📍 Torino, TO

Crownlabs is a platform developed in the Polytechnic of Turin, it allows to run **GUI applications as a service** in a **Kubernetes** environment using a **Web Frontend**. During the project my main tasks have been:

- Design and implement the Crownlabs frontend using **React.js**, **Ant Design** and **Tailwind**. The chosen language have been **Typescript**
- React components have been documented using **Storybook.js**
- Interaction with **Kubernetes API** have been managed with **GraphQL** and **Apollo Client**.

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## Peer Mentor - Computer Science Course

### Polytechnic of Turin

📅 September 2021 – January 2022

📍 Torino, TO

Helped students during Computer Science's course laboratories, teaching **Python** and **Problem Solving**

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## PUBLICATIONS

### 📄 Journal Articles

- “Enabling compute and data sovereignty with infrastructure-level data spaces,” *ESAAM 2023: 3rd Eclipse Security, AI, Architecture and Modelling Conference on Cloud to Edge Continuum*, 2023. DOI: 10.1145/3624486.3624509.

📅 Sep 2020 – Dec 2022

📍 Torino, TO

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## Bachelor's degree in Computer Science

### Polytechnic of Turin

📅 Sep 2016 – Jul 2020

📍 Torino, TO