Karuro **Chari**

INFORMATION ENGINEERING · INDUSTRIAL BIOTECHNOLOGIES

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To protect my privacy, I removed some of the most sensitive information from this document. If you need a more detailed version you are welcome to get in touch with me.

Experience

Lazy Eggplant IT Consulting
Gateshead (UK)

IT CONSULTANT
2023- now

- System architect
- Machine learning & generative models
- Blockchain technologies
- Data analysis, signal processing

chiama.ai
https://chiama.ai

SYSTEM ARCHITECT (REMOTE)
2023- 2024

Agent infrastructure to provide AI-assisted services backed by LLM models.
Mostly designed to work with VoIP, but it is multimodal.
I handled most of the work for its redesign from an early PoC and the associated research.

Productive Technology
Peterborough (UK)

FULL STACK DEVELOPER (REMOTE)
2022- 2023

- Back-end and front-end development of SPA based on .NET technologies.
- Supporting the transition to node.js and modern SFC solutions.

Newcastle University
Newcastle upon Tyne (UK)

DEMONSTRATOR
2018 - 2022

Teaching support, labs and marking for undergraduate and master modules in computer science;
for instance, OS basics, C/C++ development, game development, networking fundamentals, scientific coding etc.

Università degli Studi di Trento
Trento (IT)

TUTOR
2017 - 2018

Teaching support and lab activities for students in computer science and biotechnologies.
Mostly teaching scientific coding, C/C++ and designing algorithms to undergraduates.

CIBIO
Trento (IT)

INTERNSHIP
2018

Laser-induced motion of droplets for programmable chemistry.

IBM CIC
Segrate (IT)

IT ANALYST
2016

IT support & sysadmin activities for IBM clients (mostly financial institutions and banks).

Family business
Verona (IT)

RANDOM TASKS, MOSTLY IT RELATED
2009-2013

- Installation and setup of security systems for civil applications.
- Software design for industrial/civil automation (i.e. programming Siemens PLCs).
- Network setup & configuration.
- Electrical systems.

Education

Newcastle University
Newcastle (UK)

PHD IN COMPUTER SCIENCE (NOT COMPLETED)
2018-2023

- Research programme on stochastic simulations for biochemical and biological systems.
- Hyper-graph simulations for on chemical patterns and reaction models in small copy-number conditions.
- Exotic architectures to support graph-based computing.

Università degli Studi di Trento
Trento (IT)

MASTER DEGREE IN INDUSTRIAL BIOTECHNOLOGIES
2016-2018

- 2-years master programme in computational biology.
- Final dissertation on computing architectures based on biochemical systems.

Università degli Studi di Verona
Verona (IT)

SELECTED MODULES
2016

- Selected modules in biochemistry, organic chemistry and functional analysis.

Università degli Studi di Padova
Padova (IT)

BACHELOR DEGREE IN INFORMATION ENGINEERING
2012-2016

- 3-years programme.
- Final dissertation on compression of high-throughput reads from next generation sequencing methods.
- Fast SIMD implementation of pseudo-alignment algorithms for compression purposes

Writing

Structured stochastic models integrating layered entities for biochemistry
Newcastle (UK)

PHD THESIS
Oct. 2019 - Sept. 2022

- Discussion of a novel modelling approach for stochastic models based on structured entities.
- Integration of lazy evaluation and lazy representation in memory to avoid combinatorial explosion.
- Partial implementation in c++ of some parts for validation.
- Evaluation of alternative computing models to offload graph-based operations.

Biochemical based architectures for computing systems
Trento (IT)

LAUREA MAGISTRALE THESIS
Jan. 2018 - Jul. 2018

- Addressing the limitations of state-of-the-art technologies to perform computation embedded in biochemical systems.
- Evaluation of the potential applications in industry and medicine.
- Proposal of an alternative architecture based on synthetic-biology methodologies and microfluidic-inspired approaches.

Models and Techniques for reads' compression from next generation sequencers
Padova (IT)

LAUREA TRIENNALE THESIS
Oct. 2015 - Feb. 2016

- An approach for fast compression of reads based on a pseudo-sequencing.
- C++ implementation of the compression/decompression engine.
- Evaluation of the final performance on synthetic data.

Skills

C/C++	Since 2007. Up to date with the most recent revisions; experience with embedded system & RTOS
OpenACC/OpenMP, CUDA	Familiarity with parallel computing and some of the most common frameworks
zig, rust	Work in progress to catch up with my level in C/C++
web development	HTML5, CSS/SCSS, JS/TS, Vue & Svelte as SFC frameworks
C#	Basic professional skills with the language
python, R, LUA	Sufficient skills for scientific and scripting purposes
data oriented	Familiarity with SQL and NO-SQL database technologies, data analysis and visualization
others languages	Rusty skills with PHP5, VB6 and older versions of Java
CAD design	CadQuery, OpenSCAD, FreeCAD
3D Printing	I like 3D printers, and I have a few of them!
3D/2D Art	Good familiarity with Blender, Krita & other related tools
game engines et. similia	Godot, AFRAME, three.js
shaders, GLSL	Familiarity with visual & textual languages to implement custom shaders

Linguistic Skills

Italiano	Native speaker
English	C1/C2
Deutsch	Limited
Latina	Scholastic

Certifications & Licences

Black belt 初段 in karate *Italia*

<small>AWARDED BY FILKAM</small> *2011*

Driving licence (B)