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Personal information

Surname / First names	**Gianni, Francesco Valerio**
Address	Udbyes Gate 9B, 7030, Trondheim, Norway
Telephone	+47 98060687
Email	gfrancesco@gmail.com
Nationality	Italian
Date of birth	April 28, 1983
Gender	Male

Work experience

Date	02/2021 – PRESENT
Name and address of employer	Nabla Technologies AS
Type of business or sector	Software Engineering and IoT consulting
Occupation or position held	Owner
Main activities and responsibilities	Software and hardware development, data integration and analytics.

Date	07/2019 – 01/2021
Name and address of employer	NTNU - Norwegian University of Science and Technology, Trondheim
Type of business or sector	Department of Computer Science
Occupation or position held	Researcher
Main activities and responsibilities	Research on design techniques for IoT, rapid prototyping of smart objects and participatory design.

Date	09/2014 – 06/2019
Name and address of employer	NTNU - Norwegian University of Science and Technology, Trondheim
Type of business or sector	Department of Computer Science
Occupation or position held	PhD Student
Main activities and responsibilities	Research on design techniques for IoT, rapid prototyping of smart objects and participatory design.

Date	06/2009 – 08/2014
Name and address of employer	Kiwit di Francesco Gianni, Busnago (MB), Italy
Type of business or sector	Information Technology
Occupation or position held	Owner
Main activities and responsibilities	ICT consulting, system integration, project management and development.

Date	05/2006 – 07/2006
Name and address of employer	KIS keep it simple, Bergamo, Italy
Type of business or sector	Microsoft Office suite courses for the industry

Occupation or position held	Trainer and teacher
Main activities and responsibilities	Group and individual lessons, mainly for employees of transport companies.
Date	08/2002 – 04/2003
Name and address of employer	ST Microelectronics, Agrate Brianza (MI), Italy
Type of business or sector	Integrated circuits and silicon-based products, design and production
Occupation or position held	Production process operator, ion implanting area
Main activities and responsibilities	Working in clean-room area on silicon wafer ion-implanting machines, for integrated circuits production.

Education and training

Place and Date	Norwegian University of Science and Technology, Norway, 06/2019
Title of qualification awarded	PhD in Information Technology.
Principal subjects	Internet of Things, Human-Computer Interaction, Interaction Design, Rapid Prototyping.
Thesis	"*From Ideation to Prototyping of IoT Systems: The Case of Smart Cities*" - (http://hdl.handle.net/11250/2603358).
Trial Lecture	"*End-User Development for IoT Applications*".
Place and Date	University of Bergamo, Italy, 05/2010
Title of qualification awarded	Professional qualification as engineer.
Principal subjects/occupational skills covered	Member of Monza and Brianza Engineering Association, section A, Information Sector, n. A2281, period 2010-2014. Active member of "Young Engineers" and "Information Technology" commissions.
Level in national classification	233/240
Place and Date	University of Bergamo, Italy, 03/2009
Title of qualification awarded	Second level computer science engineer (Master Degree).
Principal subjects/occupational skills covered	Computer Science Engineering – IT systems. Thesis: "Design of an advanced language for privacy handling" as part of PRIMElife European Project.
Level in national classification	102/110
Place and Date	University of Las Palmas de Gran Canaria, Spain, 07/2007
Title of qualification awarded	25 ECTS covered.
Principal subjects/occupational skills covered	Attended courses as Erasmus-Mundus 6 months exchange student: robotics, mobile robotics, automata theory and formal languages, compilers, bioinformatics.
Place and Date	University of Bergamo, Italy, 03/2006
Title of qualification awarded	First level computer science engineer (Bachelor Degree).
Principal subjects/occupational skills covered	Computer Science Engineering. Thesis: "Design and implementation of the logic control system of a mechatronic plant".
Level in national classification	100/110
Place and Date	ITIS Einstein high school, Vimercate (MI), Italy, 07/2002
Title of qualification awarded	Lyceum diploma.
Principal subjects/occupational skills covered	Scientific technological lyceum. Physics, chemistry, mathematics, programming and CAD technical drawing.
Level in national classification	90/100

Personal skills and competences

Mother tongue **Italian**

Other languages

English, Spanish, Norwegian

Self-assessment
European level(*)

	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
English	C2, proficient	C2, proficient	C2, proficient	C2, proficient	C2, proficient
Spanish	C2, proficient	C2, proficient	C2, proficient	C2, proficient	B1, indep.
Norwegian	A2, basic	A2, basic	A2, basic	A2, basic	A2, basic

(*) *Common European Framework of Reference (CEF) level*

Social skills and competences

Through my education and professional life, I'm accustomed to travel, adapt to different environments, and cooperate with people and colleagues from different cultures and backgrounds. Spent 6 months abroad in Las Palmas de Gran Canaria University (Spain) for Erasmus university students exchange project, between February and August 2007. Spent a week hosted by a Belgian family in March 2001, during a high school exchange project. Spent a month in Southampton (England), studying English in college.

Organisational skills and competences

Experience in organizing international conferences, including editing of the proceedings (ICEC 2015, IDC 2018). During my time at NTNU I have co-supervised several master students during their specialization project and master thesis. I also have several years of experience in direct student supervision in customer driven project courses. Some of the supervised student's projects included an online IDE for Nordic Semiconductors nRF51 series microcontroller (for Bouvet ASA and Nordic Semiconductors, 2015), an auto-tracking system based on neural networks to detect subsurface salt structures (for Schlumberger, 2016), an AI backed chatbot supporting human intervention for improved accuracy (for Stamdata AS, 2017).

Work skills and competences

IoT and Embedded Devices

Direct experience in design, commissioning, manufacturing, programming, testing and integrating IoT and embedded devices based on nRF52, ESP8266, ESP32 and ESP32 RISC-V microcontrollers. The devices were used as network-attached sensors or output nodes and deployed in smart home and industrial environments. Network communication protocols used were wi-fi, bluetooth LE, RF 433 MHz, RS-485, Modbus. Developed a control program for a 5 motors mechanic arm interfaced through RS-232 for inverse and direct cinematic displacement. Direct experience in design and prototyping of smart objects and innovative human-machine interfaces, following human computer interaction (HCI) principles.
Tools and languages: C, Arduino, ESPHome, Tasmota IoT, micro:bit, Auto CAD, Eagle CAD, KiCad, Home Assistant, 3D printers, laser cutters.

API and Backend

Experience in design and implementation of secure, scalable RESTful web services for mobile and web clients. I designed and built data warehouse and data mining applications on company critical systems, while embracing agile principles and methodologies. These applications were often used to feed data science analytics platforms. The applications were deployed on linux bare metal, virtual servers, cloud or containers.
Tools and languages: Rust, Ruby, Python, Bash, Rails, MySQL, PostgreSQL, SQL Server, Docker, Amazon AWS.

Web Development

I developed several websites from small to medium/large size that handled up to 160.000+ users and 350.000+ page views per month. For some of the websites I implemented a serverless credit card payment interface with the Stripe API. The websites were hosted on virtual servers or on serverless providers.
Tools and languages: Ruby, Rails, PHP, Node.js, Amazon AWS, AWS Lambda, Wordpress, Netlify, Heroku.

Data Science

I developed an asynchronous application to collect data from various online APIs, filter and clean the data and store it on a database. The database was then used as a data source for an application written in R that performed statistical analysis and data presentation/visualization.
Tools and languages: Rust, R, Grafana, PostgreSQL, Docker, RStudio.

Server Admin

Unix/Linux daily user for more than 20 years. Excellent skills in linux server and virtual/cloud setup and management, including networking, firewalls and security hardening.
Tools and languages: Bash, Python, Gentoo linux, Ubuntu linux, OpenSSH, IPtables, Symmetric/Asymmetric Cryptography.

Design and Creativity Workshops

Co-creator and designer of the open source "*Tiles IoT Inventor Toolkit*" (www.tilestoolkit.io), a card-based ideation toolkit for non-experts to design sustainable IoT applications. I tested and refined the toolkit via 30+ creative workshops involving 500+ users. The toolkit has been adopted by users all over the world, and in 2020 received a grant by MIT (Boston, MA) to develop hands-on activities to teach pupils about the UN Sustainable Development Goals. The activities starts from ideation with the Tiles Toolkit and include a prototyping part using micro:bit electronic devices.
Tools and languages: Adobe Illustrator, InDesign, Photoshop, micro:bit.

Research and Contributions

Research

Experience and knowledge in user-centred design methods, participatory design and research on IoT applications to improve sustainability and promote learning in smart cities. Extensive experience in designing, running and adapting user studies and user evaluations. Organized and ran user-centred design workshops with several hundred users in Norway, Netherlands, Germany, Denmark, Italy and USA. Research, study and experience in computer supported cooperative work (CSCW), transitioning and mediating the introduction of new technologies in the workplace, minimizing the disruptive impact on work practices and users.

Open Source Contributions

In the form of bug reporting, filing of issues, documentation, PRs and code contributions.
Rust (*Programming language*), Ruby on Rails (*Web-Dev framework*), OpenWRT (*Embedded OS*), Tasmota IoT (*Configuration based firmware for ESP devices*), ESPHome (*Configuration based firmware for ESP devices*), Pxt-microbit (*Programming toolkit for micro:bit devices*), Flashrom (*Flash chips utility*), Docker (*OS level virtualization*).

Other skills and competences

Deeply involved and interested in modern energy-efficient home architectures, domotic. Direct experience in managing and maintaining large renewable energy plants.

Driving licence

Yes, B type.

Main publications

Gianni, Francesco, and Monica Divitini. 2015. **"Technology-Enhanced Smart City Learning: A Systematic Mapping of the Literature."** IxD&A Journal 27:28–43.

Gianni, Francesco, Simone Mora, and Monica Divitini. 2018. **"RaploT Toolkit: Rapid Prototyping of Collaborative Internet of Things Applications."** Future Generation Computer Systems (FGCS), The International Journal of eScience. Elsevier.

Mora, Simone, Francesco Gianni, and Monica Divitini. 2017. **"Tiles: A Card-Based Ideation Toolkit for the Internet of Things."** In Proceedings of the 2017 ACM Conference Companion Publication on Designing Interactive Systems, 587–598. DIS '17 Companion. Edinburgh, Scotland: ACM.

Reiersølmoen, Mikael, Francesco Gianni, and Monica Divitini. 2017. **"DELTA: Promoting Young People Participation in Urban Planning."** In Conference on Smart Learning Ecosystems and Regional Development, 77–89. Springer.

Klecha, Lisa, and Francesco Gianni. 2017. **"Designing for Sustainable Urban Mobility Behaviour: A Systematic Review of the Literature."** In Conference on Smart Learning Ecosystems and Regional Development, 137–149. Springer.

Gianni, Francesco, and Monica Divitini. 2018. **"Designing IoT Applications for Smart Cities: Extending the Tiles Ideation Toolkit."** IxD&A Journal 35:100-116.

Gianni, Francesco, Simone Mora, and Monica Divitini. 2018. **"Rapid Prototyping Internet of Things Applications for Augmented Objects: The Tiles Toolkit Approach."** In Conference on Ambient Intelligence, 204–220. Springer.

Mavroudi, Anna, Monica Divitini, Francesco Gianni, and Simone Mora. 2018. **"Designing IoT Applications in Lower Secondary Schools."** In Conference on Global Engineering Education. Educon 2018.