Salvatore Tomaselli

Curriculum Vitae

Education

2011–2013 **Msc Computer Systems and Networks**, *Chalmers tekniska högskola*, Göteborg, Sweden, *GPA 4.2/5*.

2007–2011 **B.S. Computer science**, *Università degli studi di Catania*, Catania, Italy, *GPA 110/110* with honors.

Publications

Title Towards Lightweight Logging and Replay of Embedded, Distributed Systems

Authors Salvatore Tomaselli, Olaf Landsiedel

Description In this paper we introduce MILD; providing Minimal Intrusive Logging and Deterministic replay.

In proceedings ASCoMS 2013

Title LibReplay: Deterministic Replay for Bug Hunting in Sensor Networks

Authors Olaf Landsiedel, Salvatore Tomaselli, Elad Schiller

In proceedings EWSN'15

Masters Thesis

Title Debugging Wireless Sensor Networks with Incremental Snapshots

Supervisor Professor Olaf Landsiedel

Description This thesis intoduced a tool to capture event from a wireless sensor network, where nodes use TinyOS, and allow deterministic replay of the network inside a simulator.

Bachelor Thesis

Title Sviluppo di server web e sistema di caching per contenuti dinamici

Supervisor Professor Giuseppe Pappalardo

Description	This thesis was focused on the implementation of an HTTP/DAV server that can cache and invalidate server-generated responses, leading to greatly reduced IO and CPU loads.

Experience

2016-	**Senior Software Engineer**, *AppGate*, Göteborg, Sweden. The product is a VPN solution that comes with advanced per-user permissions; used also by the USA armed forces. It includes clients and a Linux based appliance. I work on creating the appliance custom distribuition and on build systems. I have designed and implemented: ○ the crypto verification of upgrades, ○ a distributed barrier (with formal proof), ○ a way to obtain type safety when working with untyped json data (typedload), ○ various caching systems to speed up builds.
2014-2015	**C++ Software Engineer**, *Minerva Networks*, S. G. La Punta, Italy. The company, US based, sells software and hardware solutions to content providers, to provide live programs or download on demand. The C++ team provides a scalable and geolocated version of the backend API. My role included the integration of Elasticsearch within the API, to provide the devices with full text search and filtering. I also contributed to solutions to deploy and manage clusters.
2013-2014	**Backend Python Developer**, *Duego*, Göteborg, Sweden. The product was an online dating app. The position involved writing and maintaining a REST API in Python for the clients to use, and managing the servers (production and staging). The API code was based upon different technologies: Flask, Redis, Elasticsearch, Mongodb. For the staging and production environment I had to work with AWS, autoscaling, Jenkins, Saltstack, graphite, New Relic and several tools that were developed in house.

Notable free software projects

typedload	A library to load json data into Python typed data structures. It is used to enable mypy to statically check code which loads data into dynamic datatypes (list, dictionary) making sure it conforms to certain static types instead. `https://github.com/ltworf/typedload`
Relational	Relational, a relational algebra parser/compiler/optimizer. Implemented in Python It can compile and execute relational algebra, and perform optimizations. It is used by several schools and univerities across the world. `http://ltworf.github.io/relational/`
lapdog	C++ daemon that uses ICMP+ARP to generate events upon appearing/disappearing of network devices. `https://github.com/ltworf/lapdog`
weborf	A HTTP/DAV server, implemented in C. `http://ltworf.github.io/weborf/`
localslackirc	Python daemon to bridge slack (the chat) with IRC. `https://github.com/ltworf/localslackirc`
Canary	Dynamic library to monitor for heap overflows, implemented in C. `https://github.com/ltworf/canary`

Skills

Languages	In order of experience: Python, C, C++, Java, QML, JavaScript
Databases	PostgreSQL, MySQL, MongoDB, Redis, Elasticsearch
Frameworks	Django, Qt5, Flask
Software	Debian, GNU Autotools, Git
Technical	Experience in making C code work on various POSIX platforms; using pthreads, atomic operations, networking. Programming on embedded systems, asynchronous or event-based.

Contributed to

Subsurface	The only divelog available on Linux systems. Packaging and portability and localization, and a functionality to export the logs on a website I made.
Debian	At the present time I am a Debian Maintainer (DM). I maintain mostly packages in C and Python; the most used of them is xinetd.

Languages

Italian	**Mothertongue**
English	**Fluent**
French	**Basic**
Swedish	**Very basic**

Interests

- Playing music
- SCUBA diving
- Board games
- Literature

Other

I am physically disabled, and I am mentioning it because some countries have specific legislation.