**Curriculum Vitae**

***Personal Info***

**Bruno Bonacci**

Nationality: Italian

**Check my availability and updated CV at:**

<http://www.brunobonacci.com/job>

***Profile***

*I find reading CVs very boring. Nowadays CVs look mostly the same with a similar format and very sterile content. Therefore I’ll try in this short paragraph to give a glimpse of my personality and my technical experience.*

*-* ***over 20 years*** *of commercial experience.*

*- at 16 years old, I designed, developed and sold my first ERP on my own*

*- self-taught, self-motivated, self-started, the passion is my drive*

*- most of my career worked on complex distributed systems focusing on Scalability, High-Availability, Performance, Security and Resilience.*

*- I’m particularly intrigued by the challenges of high-volume environments. For example I’ve worked for CISCO where our cloud system was processing* ***over 3 billion req/day*** *and recording those requests in a data-warehouse of* ***over 1 trillion records****. In Italy I worked for Infostrada, the second largest Italian telco, processing* ***over 10 billion req/day*** *with* ***over 40 million of users****. Worked for Channel 4 Television in UK with a reach of over* ***46 million*** *online users,* ***9 million*** *registered users and over* ***50 TB*** *of analytical data. At Tesco I designed and developed a near real-time analytics platform to analyse metering data from 500K Hudl2 tablets; the platform was processing* ***175Gb/day****,* ***28M events/h****, storing over* ***4Bn events*** *and collecting over* ***10TB*** *of data in just 3 months.*

*- in the 1999 I joined Wuerth-Phoenix and designed an application server in Java while no other commercial application servers were available. Designed a Object Persistence System (such as Hibernate) to persist large database design (over 3000 tables).*

*- I started using NoSQL at that time (1999) using an Object Oriented datastore called Versant as main database for very large enterprise applications*

*- Have good experience in developing multi-threading systems with low latency*

*- I spend lot of effort in designing effective test automation, continuous integration and continuous delivery*

*- I worked with many different languages (listed below) however I’m now focusing on Java and other JVM languages such as Groovy and Clojure and* ***I particularly love Clojure and the LISP language design****.*

*- I have good management experience, at one time I was managing over 26 people in geographically distributed teams.*

*- I worked for many years improving the Quality of many products by redesigning the architecture with more appropriate and scalable designs, rather than patching the broken code only*

*- I enjoy designing systems and being hands on technical development.*

*- I favour Agile methodologies and Lean development principles preferably without the ceremony of the modern consultancy companies.*

*- I am passionate, I keep myself very up-to-date reading books, blogs and frequenting technical meetups.*

*- I love simplicity*

*Nowadays my interest goes to BigData, Cloud Computing, NoSQL, Hadoop and more productive languages such as Groovy and Clojure.*

***Technical Knowledge***

**Programming languages:**

Java, Groovy, Clojure, Javascript (some), C, C++, Visual C++, Visual Basic, Fox Pro, Visual Fox Pro, Clipper, Pascal, Modula/2, ProLog, Pro\*C, QBX, Assembly, PHP, Jacl, Tcl, HTML, XML, XSLT/XSL-FO, XML SOAP, SQL, UML, IDL, ASN.1, Bash, sed and AWK.

**Operating Systems:**

MS-Dos, Window 3.11-8, HP Unix 11, SCO Unix, OS/2, Linux

**Databases and Caches:**

Oracle 8-9i-10g,11i, Vesant 6-7 (NoSQL), Vertica, ObjectStore, Informix, Interbase, MySql 3-4-5, FoxPro DB, DBF, Access, PostgreSQL, Cassandra (NoSQL), MongoDB, Redis, Memcached, Ehcache, JBoss cache, Coherence, Infinispan, Terracotta.

**Frameworks:**

**Web**: Spring, Hibernate, Tomcat, Apache, Vert.x, Grails, Liferay, Nginx, JBoss, WebSphere, Weblogic, Varnish, Jetty, http-kit, HAProxy

**Data**: Hadoop, Pig, Hive, Spring Batch, Cascalog

**Clustering**: Keepalived (VRRP), JGroup, ZooKeeper, Exhibitor

**Events**: Camel, ActiveMQ, RabbitMQ, Storm, ESB, CEP, SEP, SEDA, Kafka

**Build & Test**: Gradle, Jenkins/Hudson, Sonar, Ant, Maven, Spock, BDD, TDD, Gatling, PMD, Checkstyle, Findbugs, JUnit, TestNG, Mockito, EMMA, Cobertura, Midje, Marginalia.

**Virtualization**: VirtualBox, VMWare, vSphere, Xen, Proxmox, KVM, Vagrant, Docker

**Cloud**: Amazon AWS, S3, EC2, SNS, SQS, DynamoDB, SES, ELB, OpenShift, Azure

**Others skills**:Java, J2EE, SOA, Web-Services, Multi-threading, networking, Continuous Integration, Redis, Jackson, Apache-Avro, BDD, TDD, Continuous Delivery, Polyglot systems, Cloud Services, Continuous Integration, Governance, SEO, Splunk, Ganglia, OpenVPN, Webservice, Agile, Scrum, Jira, RallyDev, Perforce, Git, Mercurial, SVN, CVS, VisualSafe, JPA, Luntbuild, Code Coverage, Selenium, JScoverage, Qunit, Object Oriented Design, SOA Design, Design Patterns, Full development lifecycle, Management, Team leading, Project Management, HTTP, FTP, ICAP, CORBA, RMI, XML, UML, MDA, XSLT, CruiseControl, ASQ, ULC, Swing, Applet, Servlet, HTML, JMS, EJB, JDO, JPA, SQL.

***Studies & Qualifications***

High School Science Diploma 58/60 - Science School "E. Fermi" Cosenza (Italy)

Three years of Computer Science Engineering at University of Calabria (Italy)

Oracle Database Administration Fundamentals I and II (2006 Oracle)

***Languages***

Italian, French, English

***Working Experiences***

Period**: May 2014 - present**

Project**: Tesco (London)**

Title**: BigData Architect**

I’ve designed and built a near real-time analytics platform to collect, analyse and correlate metering data coming from Tesco’s Hudl2 tablet. Hudl2 is an Android tablet awarded with the *“Best Value Tablet” at the 2014 TrustedReviews Awards.*

The platform was composed by an async RESTful layer which was ingesting the metering data and device events. The API were designed to achieve a 1500 req/s with single digit latency. A data processing pipeline, in real-time, would then enrich the events with additional data streams, correlate independent events deriving higher level/aggregated ones. The data processing pipeline and the ingestion APIs, were both written entirely in Clojure. Stateful event stream processing was achieved with the support of an in-memory datastore which was then backed by Cassandra. Once the raw data was processed by the data-pipeline the output was then indexed into an ElasticSearch cluster which offered real-time query and aggregation capabilities. The platform collected over **10TB in just 3 months**. At peak time it processed **28 million events per hour**, and receives 175GB per day from half million devices. We ran our analytics queries on over 4 billion events in ElasticSearch in which we were keeping last 90 days. The platform was entirely designed, developed, tested and maintained in operation by just 2 people (myself and one more person).

***Skills used****: BigData, Clojure, Cloud, Azure, Analytics, real-time, Kafka, Cassandra, ElasticSearch, Kibana, Graphite, StatsD, Linux, Cascalog, Hadoop,* ZooKeeper, Exhibitor, Midje, Marginalia.

Period**: June 2013 - present**

Project**: Postreet.io (startup)**

Title**: Co-founder and Principal Architect**

Postreet.io is a platform for geo-localised mobile advertisement. It allows to send messages to a mobile device based on the device’s location. The service provides RESTful webservices interface and a mobile SDK to access the APIs. We had a very successful trial of the system and we are looking for more commercial engagement with companies. My duties were to design the overall architecture, implement the all server-side infrastructure, and maintain the services in operations.

The platform offered the basic building block for a variety of location based services which we sought to implements with different business partners.

***Skills used****: BigData, Java, SOA, Microservices, RESTful Web-Services, Hadoop, Pig, Hive, Cascalog, Clojure, Redis, Cloud, AWS, EC2, EMR, S3, ELB, Route53, Glacier, MongoDB, RabbitMQ, HAProxy, Vagrant, Docker, Splunk, Analytics, Graphite, StatsD, Event-sourced, Midje.*

Period**: May 2013 - January 2014 (9 months)**

Project**: Channel 4 (London)**

Title**: BigData hacker / BigData Architect**

I’ve been working within the R&D department to explore, find and promote, BigData technologies with the aim of improving Channel4’s capabilities to leverage the large amount of data at their disposal.

During this period I have worked on the following projects:

 - Built a system able combine recommendations and personalisations in real-time from several event streams and able to support over 1500 req/s using Storm in DRPC mode.

 - I’ve designed a recommendations system based on Mahout/Pig for C4 video content for ~9 million of users and ~200M of user’s actions per month. The system is based on Mahout’s Item-based Collaborative Filtering which analyses the user’s behaviour to predict/recommend new interesting content to watch. I’ve also designed a built a system to evaluate comparatively the recommendations against the currently used system.

 - During this project I’ve also explored Prediction.IO and ways to scale it using AWS/EMR.

 - C4 data analysts use a home grown platform for BigData called BigData Control Panel (BDCP) which is backed by Hive/Hadoop and AWS EMR to process over **50 TB** of analytical data.

 - To reduce the query latency I’ve built a RedShift cluster with ~8 billions rows and measured a 100x-700x speedup compared to a cost equivalent solution with Hive/Hadoop.

 - I’ve worked along with the Data Scientist team in a demographic targeting of C4 user base to scale and automate their SVDs computations.

Other technologies briefly explored are: Cloudera CDH4/5, Impala, Parquet format, Cascalog, Docker.

***Skills used****: BigData, Java, SOA, Groovy, Vert.x, Web-Services, Hadoop, Pig, Hive, Cascalog, Clojure, Redis, Cloud, AWS, EC2, EMR, S3, MongoDB, Storm, HAProxy, Whirr, PredictionIO, Mahout, Route53, Riak.*

Period: **December 2011 - December 2012 (13 months)**

Project: **FIS Global - Debit & Prepaid cards (London)**

Title: **Senior Technical Architect**

FIS is a global company providing services for card payment for banks and financial institutions. FIS offers a Card Processor Service to provide realtime authorization of cards payments in connection with Visa and MasterCard.

My role is to support development and operational teams with enterprise design of SOA services and outline an architectural roadmap to fulfil scalability and high-availability objectives with technical recommendations.

I’ve defined the solution and technical architecture, ground-up, for the entire web and service infrastructure, replacing proprietary containers and high-end hardware with open-source, container-less solutions and commodity hardware. My focus was to improve scalability, performances, resilience and maintaining a simple SOA/RESTful design. This was a green field project for which I’ve selected the full stack of tools and technologies to use, favouring small light-weight asynchronous web framework to J2EE containers.

I’ve been leading the analysis and resolution of critical production issues. I was responsible for reviewing and analyzing penetration test reports as well as improving security by correcting design flaws.

I was responsible for analyzing architecture and code of critical batch processes and improve performances (from over 32 hours of execution down to 4 hours circa).

I was responsible to select/recruit a team in India, as well as selecting team members for London’s office, conducting interviews and preparing technical tests.

I was promoter of technical innovation and evangelisation, organising “**Tech@Lunch**” initiative. A series of technical presentation at lunch time with the intent to talk about new technologies, demoing new languages, products and tools, and stimulate the innovation.

I used Splunk (BigData log analyzer) in development and staging during root cause analysis and finding correlated events causing live issues. Built service dashboard extracting useful metrics in real-time, offering a platform for log exploration for non-technical teams and business members. Analyzed logs from production for auditing and data-forensic purposes after outages discovering potential DOS attacks. Extracted useful information and metrics about user traffic on customer websites.

***Skills used****: Java, J2EE, SOA, Web-Services, Multi-threading, networking, Tomcat, Apache, Liferay, Informix, Spring, Continuous Integration, WebSphere. Green-Field project: HA-Proxy, Keepalived, Nginx, Varnish, Vertx, Jetty, Redis, Jackson, Gradle, Groovy, Grails, Spock, Gatling, Camel, ActiveMQ/RabbitMQ, EDA, ESB, Jenkins, Continuous Delivery, Polyglot systems, Storm, Hadoop, Pig/Hive, Cassandra, VirtualBox, Vagrant, Splunk.*

Period: **April 2011 - August 2011 (5 Months)**

Project: **AKQA (www.akqa.com) - project: Volkswagen**

Title: **Senior Technical Architect**

AKQA is global digital agency specialised in designing high-performances car configurators, and global sites. My responsibilities were to define the architecture for parts of the global site for one of the world largest car producer. This included front-end architecture as well as back-ends web services. This position was very hands on development, where I've been focusing on developing critical parts of the system, as well as review and improve the code with developers. As architect I've participated to the governance programme ensuring that new design and implementations adhered to all defined defined rules and conventions, and join the governance committee to review global architectural decisions. The site was built using portals technology powered on back end by a network of web services. The environment was Agile with Scrum, CI, and automated tests.

***Skills used****: Java, J2EE, SOA, Web-Services, Multi-threading, networking, Tomcat, Apache, Liferay, Mysql, Spring, Camel, Cloud Services, Continuous Integration, Governance.*

Period: **December 2010 - till present**

Project: **HouseHub.org**

Title: **Founder and Principal Architect / Principal developer**

Househub.org bridges the most popular sites for properties renting in the London's area to enable the final users to search for a property across all sites at once. It uses the passive search paradigm (alert system), in other words the users define his search criteria, and passively he gets all new property ads matching those criteria as soon as they are advertised. The system back-end uses the Staged Event Driven Architecture approach (SEDA) and implemented using a lightweight ESB. The front-end it is used to define users' search criteria and it is implemented in Groovy and Grails. The systems checks continuously most popular property sites, when it finds new ads, it scans them and retrieves relevant information. Then it matches the information with users search profiles and it notifies them via email. The user saves a lot of time on property hunting because doesn't need to visit and search on all property sites, but he gets notified when something relevant come up in the market.

I've designed and integrated a recommendation/similarity algorithm with the *k-nearest-neighbours*approach using a mix Pig/Hadoop and SEDA strategies. The Hadoop job cross-matches over 3 million of adverts in a 9 trillion dataset (over 1.5 Petabytes). The “distance” algorithm is a unidirectional, multi-category normalized computation over the following properties: geographical distance, price, property size and advert “freshness”. Due to the complexity and scale of the problem I’ve then changed the approach and calculate similarities in ingestion (*lambda architecture*). In ingestion adverts are added to a memory-mapped file hash-trie of geohash tags that serves as partition base for computation of the distances. This solution allowed me to pre-compute similarities using a single EC2 small instance rather than a large EMR cluster.

I’ve integrated Splunk not only for the log analysis but as a platform for application metrics, building service dashboards and using it for root cause analysis. I used the tool for strategical decisions based on trend analysis. Currently it collects hundreds of service/application metrics offering a powerful data-visualization and enabling a fast and accurate operation support.

***Skills used****: Java, J2EE, EDA, ESB, Multi-threading, networking, Groovy, Grails, Tomcat, Apache, Mysql, Spring, Camel, HA-Proxy, ActiveMQ, Cloud Services, SEO, Pig, Hadoop, MongoDB, Cassandra, NoSQL, Splunk, Ganglia, OpenVPN, AWS, S3, EC2, SNS, SQS, DynamoDB, SES, ELB, Redis, CEP, SEP, Hadoop, Pig, EMR.*

Period: **September 2010 - End of November 2010**

Company: **Betfair (London)**

Title: **Quality Assurance Manager**

Betfair provides Sport Exchange Platform on global scale. I was QA Manger of the Sport Platform API. I manage a team of ten automation engineers (permanent and contractors) throughout a global release of a new service within the Sports Platforms API (SOA). I've introduced a Continuous Integration in my functional area based on Hudson and Sonar.

*Skills used: Java, J2EE, SOA, Webservice, Continuous Integration, Agile, Scrum, Hudson, Sonar, Jira, RallyDev, Perforce.*

Period: **January 2009 - July 2010**

Company: **CISCO Systems / Scansafe (London)**

Title: **Quality Assurance Manager**

CISCO is the world leader provider of SaaS security. CISCO provides a real-time traffic scanning to block viruses, malware, spyware and unwanted content. My duties are to establish the QA department defining process, rules, guidelines and review architecture. Introduce a Continuous Integration based on Hudson, Sonar, Groovy, Luntbuild, Maven 1 and 2, Junit/TestNG/Qunit, Selenium and JScoverage, static analysis of source code (FindBugs, PMD, CheckStyle, Sonar).

The environment is Java 6, Spring 2.5, Oracle, Vertica. The strategy applied is based on Automated Software Quality via JUnit and Code Coverage (Emma/Cobertura). My duties cover also managing a small team of 3 people with functional and technical coordination (1 offshore).

The QA department has to do strict code review, verify the implementation and tests written by the development team, review the architecture in order to improve scalability, performances and security. The QA is in charge to create performances and load/stress test suites, to perform fine tuning on JVM Garbage Collector, to create framework and basic infrastructure to simplify the implementation of automatic test cases for the developers. For example I reviewed the architecture and implementation of a multi-threaded software proxy, improved its design resulting in 5+ times faster.

My duties include **review architectures and implementation**, refactoring for performances improvements, manage development projects of application to support the development process, integrate Agile methodologies and guarantee high quality for functional delivery. Code analysis, identification of vulnerability (functional and security), DoS protection and design test harness to verify reliability under load. I've designed and implemented a Continuous Integration system in Groovy using Maven and Hudson. The development process itself is fully automated and supported by a set of systems developed in Groovy/Java/Spring designed and implemented by myself and my team.

***Skills used:*** *Java6, J2EE, Spring, JPA, Hibernate, Oracle, Vertica, ActiveMQ, WebServices, Groovy, Maven1/2, Hudson, Sonar, Luntbuild, JUnit, TestNG, Code Coverage (Emma/Cobertura),* FindBugs, PMD, CheckStyle*, Selenium, JScoverage, Qunit, Agile, Scrum, Continuous Integration, Multi-threading, OO Design, SOA Design, Java networking, C, C++, Full development lifecycle, Management, Team leading, Project Management, Networking, HTTP, FTP, ICAP protocols.*

**From June 2008 to end of 2008.** Travelling Asia, mountaineering Dolomites, moving to London.

Period: **April 2003 - May 2008**

Company: **Wuerth Phoenix srl (Italy)**

Title: **Head of Quality Assurance -** **Senior Core Architect**

My duties were to design internal processes and define team collaboration for the whole Wuerth Phoenix International group. The software development process was defined using Agile concepts from Extreme Programming and Continuous Integration. As Senior Core Architect I've participated to the design of an application server called Zeus (project started in 1998 in my previous employment in this company), for which we received a nomination for the "International OMG Awards 2003" in London for "Best MDA (Model Driven Architecture) approach", for our software architecture and development methodology based on UML model design. As Development Manager I had to design and realize MDA framework support for unit and integration testing, design a framework for automated performance measurement under Continuous Integration environment.

This role included both management and hands on design and development activities. From the management side my duties were to establish the QA department in the company, recruit team members, plan budgets for the department, define department annual targets and coordinate the communication and collaboration between all locations. As team manager my duties included work assignment, annual reviews, coaching, define deliverables, salary definition, objectives and bonus assignment.

From the technical side my duties included to review architectural design of the application server, develop parts of the framework and the application server using Java/J2EE APIs, take care of performances, scalability and security issues, and check the multi-threading operations. Define criteria for security as password management, ACL and access to customer sensible data. The development included database connectivity with JDO/JPA for Oracle and Postgre, and JVI for Versant, CORBA and RMI for communication layers. The applications were deployable in Tomcat, WebSphere or JBoss with rich clients (Canoo/ULC), and the enterprise integration with legacy systems through JMS, EJBs, and Web services.

Projects realized here:

Design of software development processes and methodologies for Wuerth Phoenix with the target to define clearly responsibilities and information exchange between development teams organised in several locations (2 branch offices in Italy, 2 in Switzerland, 3 in Germany, 1 in Hungary, 1 in Netherlands, 1 in USA e 1 in China), looking after language differences and time zone difference. This process definition gave the possibility to Wuerth Phoenix to support a very large growth (from 135 people on 2003 to 465 on 2004) and to optimise resources improving response time for our customers (average response time improved of 63%).

Design of internal product Zeus, an application server and development framework used to design and develop all other company products. This software was developed totally in Java/J2EE using MDA approach.

Design of Automated Software Quality systems (ASQ) based on concept of continuous integration with static and dynamic analysis of source code, performances analysis, load analysis, functional analysis for multi-platform certification (Windows, Linux, HPUX), multi-database tests (Oracle, Versant, *PostgreSQL*,...), and semantic check on models and architecture break checks. With this approach the company reduced the number of bugs by the 93% in 14 months.

Organisation of trainings and designing certification process for our products into company's academy.

Design of systems for development process auditing with graphical project trend analysis, activity analysis for design, development, QA and support phases, analysis of service level agreements (SLA)  and response time for support teams.

Responsible of Quality Assurance department for all products developed in Wuerth Phoenix with 22 people on 4 branch offices (Italy [Rome and Bolzano], China and Germany).

Design and implement of an Enterprise Integration System (EIS-ETL) for heterogeneous systems (integration also in real-time). The system was a part of Zeus and was using a SQL-like language to define the output formats to export data. The focus of this system was to provide ETL capability to the Zeus application server, with a easy and flexible language as well as very powerful and robust tool to migrate huge database structures.

***Skills used:****Java, J2EE, Groovy, C/C++, CORBA, RMI, XML, UML, MDA, XSLT, Oracle, Versant (NoSQL), MySQL, ActiveMQ, PostgreSQL, JUnit, Luntbuild, CruiseControl, ANT, Maven 1&2, Code Coverage (Emma), SVN, CVS, MDA, ASQ, Linux, Windows, HP-UX, Design Patterns, Object Oriented, SOA design, ULC, Swing, Applet, Servlet, HTML, JMS, EJB, Tomcat, WebSphere, JDO, JPA, SQL, Agile, Scrum, XP, Continuous Integration, Multi-threading,*Full development lifecycle, Management, Team leading.

Period: **May 2001 - April 2003**

Company: **Data Mark Brokerage Services S.r.l (Milano/Consulting)**

Title:  **Development Manager**, **Senior Enterprise Architect, Senior Developer**

Below the project participations as consultant:

For "**Infostrada SPA**" (the second largest Italian telecommunication company) I've created a "MDS Collector Manager" to collect CDRs (Call Details Record) from telecommunication hubs located all over national territory. Analysis, software architecture and development of a daemon Unix (HP-UX11 x SuperDome) in C++ entirely done by me. The system, declared as "Mission Critical" (max downtime certified), was organised into a main daemon that controls several distributed agents via IPC. Communication protocols with telecommunication hubs were specialised for each kind of vendor/producer of hub, the MDS Collector Manager supports a plug-in architecture system to be able to add new agent for new hubs in a easy and secure way. The biggest design efforts was direct to obtain a certified High Reliability proved by over 700 automatic test cases able to check a large number of possible problems. Moreover I had also to specify some procedures of Disaster Recovery and Incident Management, and define methodologies for active live monitoring.

For "**Infostrada SPA**": I've done the analysis of organisation solutions for configuration management. Within this project I've coordinated defined strategies of CM via CVS for all development teams.

For "**Infostrada SPA**": **Development Manager** of a team of 15 people. I've  integrated systems for traffic management during the merging between "Infostrada SPA" and "Wind SPA". The existing system of Infostrada "MDS Mediation Device System" was selected to manage the whole traffic of both companies. From the technical point of view the MDS of Infostrada was a C++ application designed for HP-UX Superdome with Oracle 9 database, Wind SPA network was based on Ericsson's technology, and the MDS was designed to work with Alcatel network. My role included the team management as well as redesign part of the MDS architecture and extend it in order to include the new platform traffic.

For "**Infostrada SPA & Wind SPA**": **As Senior Architect.** Design and implement plug-ins to extend functionalities of BillingGateway (Ericsson).

For "**AAA Bank SPA**": (service company born from a joint venture between three Italian banks) **As Architect Leader** I've designed and realised an online-trading and online-banking software. The system based on J2EE (WebSphere/Oracle) was designed as a backend service (SOA) to support online trading for multi-channel banks, and possibility to plug several real-time Info provider (MilanoFinanza and Reuters) for the market stock quotes. The online-trading service was providing the most common capabilities (like: portfolio management, stock alert, planning, etc). The online banking offered two option: front-end and back-end fully implemented in Java implementation, or a live connection with existing back ends like a DeltaDator spa solution (AS/400) or a remote connection via EJB services. The front-end application was based JSP/Servlet architecture driven by a "decision maker" engine able to provide a full control of the application workflow as well as taking care of security issues. The identification and authentication mechanism was driven by a Single Sign-On (SSO) solution. Due to the strict security policies we had to implement a customized middle-ware with the aim to protect sensible data, and build test harness to verify the correct operatively as well as making intrusion tests.

For **Data Mark Brokerage Services srl** I've made the analysis and design of a skill inventorying system realised in PHP, Mysql and Java/Lucene.

Period: **February 1998 - May 2001**

Company: **Würth s.r.l. (Rome)**

Title:  **Senior Technical Architect, Senior Developer**

As **software architect** and developer in a international project. Here I've designed an ERP for middle sized and big sized (more than 3000 employees and more than 500 system user) trade companies. For this project we designed an application server called Zeus. The analysis and design phase was entirely done in UML by using an MDA approach. I was responsible to design part of application server and of analysis, design and development of an engine able to analyse warehouse good stocks and make fully automatic purchase orders for more than 300.000 products, looking over worldwide suppliers for best conditions (price, delivery time, etc etc).

This system was completely written in Java, CORBA and using Versant (NoSQL) as OODBMS (object oriented database).

Period**: February 1997 - February 1999**

Company**: AZ Computers s.r.l. (Cosenza/Italy)**

Title**:  Development Manager, Senior Technical Architect, Senior Developer**

Responsible of Software Development division, analyst, software architect and programmer. This small software company developed 6 products like: ERP system for fashion companies (retail and distributors), ERP for salesman networks, ERP of hospitals, financial and accounting system. I've been trainer in several training session for our customers.

**From 1996 to 1997 collaboration with "Teorema Ufficio" in Cosenza**. Responsible of computer technology division. My duty covered from contact with supplier, purchase orders, building up computers, network installations, and customer maintenance.

**From 1992 to 1996 software designer and programmer as freelancer** with several projects for small companies and banks. Collaboration with Olivetti branch office managing the networking division.

***Interests***

Great passion for photography with three exhibitions in Bolzano (Italy), mountaineering and rock climbing practiced regularly. A love for travelling, books and music.

References available upon request.