Curriculum Vitae et Studiorum

Cesare Bianchi, *Ph.D.*

Version 7.4.4 - Aug 6th, 2018
(the most recent version of this document is always available on the website: http://www.cesarebianchi.com)

Born:	Rome, Italy, February 12th, 1979
Nationality:	Italian
E-mail:	cesare@cesarebianchi.com
Website:	http://www.cesarebianchi.com
Current occupation:	Researcher, ICT Consultant, Project Manager.
Main skills:	Analyzing, Problem Solving, Communicating, Negotiating, Creativity, Proactiveness, Collaborativeness, Leadership.

Professional Experience

Current (since Apr 2015)	CEO and co-founder of GH srl, start-up of Sapienza University of Rome. Head of Research unit.
	I have guided the start-up company in designing, producing and selling services and products based on the academic research. I manage the process of exploitation and dissemination of the results of our research. As software architect I also manage the design and development of our software.
	Using the results of academic research our start-up designs and develops solutions to solve problems about the complexity of public transport and optimization of ETA of buses, GIS and optimal network of public transport based on real movements of citizens. We carry out a citizen science research project called "ZanzaMapp" for the mapping of mosquitoes. The project helps to fight mosquitoes through collaborative mapping and geographic statistical analyses. It was chosen by the UN Environment to co-found the project "Global Mosquito Alert".
	I achieved the task of successfully transform "proofs of concept" in nation-wide known products that are used by thousands of people and featured on newspapers and tv. I chose my collaborators to help me in this success and created a team that is now able to continue the job of marketing, research and development.
	I liaised with partner companies, for the development and integration of a second-generation bus-tracking system based on the latest GIS technologies, for the accurate prediction of the times of arrival and the integration with global web-based mapping services such as Google Transit and Bing Maps, based on optimized algorithms.
	I constantly negotiate with other research groups in the university, other research organizations and other companies, with customers and partners, with Mayors (municipalities and administrations are also customers and partners), with the administration of the university, with the UN Environment authority.
Apr 2015 - Mar 2017	Postdoctoral Researcher at the Physics Department of Sapienza University of Rome. Member of the Kreyon Project, funded by the John Templeton Foundation, in collaboration with the Lego Foundation, Sony Computer Science Laboratories, ISI

Foundation.

Research on the complexity and dynamics of creativity. Design and development of web-based experiments and data analysis to investigate the complex patterns of human creativity and to unfold and quantify the underlying mechanisms through which creativity emerges and innovations diffuse, compete and stabilize. The experiments were implemented with jQueryMobile, Node.js, SVG.js, Midi.js, PhantomJs, PostgreSql, Java, OpenCV. The developed experiments/games include "LegoRhythm", which allows people to collectively compose music using Lego bricks, and "LegoPixelArt", for the collective drawing of concepts using Lego bricks. Both a touchscreen and a physical version were developed, with a system to recognize the physical drawings made with real Lego bricks and import them in the database. The resulting data was analysed with advanced statistical methods and several papers have been submitted for publication.

Organization of events and conferences. Participation in the Scientific Organizing Committee for the Kreyon 2017 conference, for which I peer-reviewed the proposed papers. Participation in the design and co-management of four complex events for the Kreyon Project involving several multimedia installations and various kind of games, with a hundred people working at their making and maintenance, in "Palazzo delle Esposizioni" in Rome and at the "Maker Faire" in Rome. The aim of the events and installations was not only to gather data but also to communicate the research results and engage the general public. Organization of the XVII international congress of the AHLM association.

Design and partial development of a system based on Rfid technology, used to track the physical interactions people-people and people-installation during the Kreyon events. All the data was analysed with advanced statistical methods and several papers have been submitted for publication.

I founded the ZanzaMapp project, a citizen science project that helps to fight mosquitoes through collaborative mapping. Architectural Design and partial development of the report and mapping system, based on Cordova, jQueryMobile, Leaflet and OpenStreetMap for the implementation of the multi-platform App, and on Node.js, PostgreSql and other GIS libraries for the implementation of the server. The collected data is constantly analysed with automated statistical procedures which I designed and developed, in order to produce statistics and geographic models of the distribution of mosquitoes and optimize the response. For this project, I managed a team composed of software developers, scientists from the Department of Public Health Infectious Diseases and scientists from the Department of Physics.

Research on the complexity of public transport systems. Design and development of systems and algorithms to model the complexity of public transport, using Meteor, Cordova, Node.js, MongoDB, Leaflet, D3, GeoJson, Turf. The result was a platform to simulate the quality of public transport in real cities, which allows the user to modify the existing transport network and see on the map how this affects the quality in the various points and zones.

Design of the architecture and of the technical and functional analysis of a virtual currency system, to foster the emergence of micro-economies in refugee centres across Europe. The security and non-deniability of the system were designed using the Bitcoin blockchain system. Particular attention was given to the usability in a multi-cultural multi-language environment, and to the need to create trust in the system and between the members. The need of the locality of transactions and the availability of the service offline were also taken in consideration, with innovative solutions. The multi-tier system included a distributed server array, the multi-platform app and a website.

Part of my duties was also being Assistant Lecturer for the Computer Skills course and the Computational Lab course, for the years 2015/2016 and 2016/2017.

Dec 2012 - Mar 2015	Self-employed. Marketing and Management of lifecycle and development, of a scalable web-based application for Insurance Brokers, which I designed and developed in Php, JavaScript, jQuery, PostgreSql and other technologies. Using Agile methodologies I had the opportunity to better manage multiple customers and harmonize their various requirements.
	Development in Java and Php of an applet to use scanners from web browsers and save the scanned documents on the server.
	Development in Java of an applet for the remote control of computers using a portable VNC server.
Jun - Aug 2013	For Almaviva, as an external consultant, I managed a group of 10 people for the development of a Java Enterprise application in a complex business environment, with the stakeholders pertaining to another branch of the same company. I designed and contributed to the development of the application for the complete management of the "Governance, Risk Management & Compliance". The application was developed as a suite of portlets for Liferay and many personalizations with hooks and other advanced technologies.
Dec 2009 - Nov 2012	Collaboration with Computer Aid s.r.l.
	I managed, using Agile methodologies like Scrum, a group of 6 people for the development of a module for a complex multi-tier application, and the contacts with the clients and with other stakeholders. In this environment I had the opportunity to improve my organizational and relational skills and the ability to focus on targets and motivate people. For this project I developed in C# a novel library for the optimized caching of database information, in terms of memory load and responsiveness.
	I also managed and improved the internal communication of the company, thanks to my Psychology skills, allowing people to better understand mutual problems, have an overall view of the company, and thus work more like a single team.
	I was also responsible of the Recruitment, both for the Psychological and Technical aspects. I developed new aptitude and technical tests in addition to performing personally the interviews.
	I worked on the design and development in J2EE, using Weblogic application server and Liferay portal, of a complex multi-tier application for the intranet of ENI (a major multinational energy company). In this context I had to analyse a complex requirement about data versioning and to write a novel complex library for its management.
2009 - 2013	As Member of the Board of Directors of the Italian Association for Cognitive Science (AISC), I managed the establishment of a peer-reviewed process for the approval of papers for the organized conferences. My role was central to guarantee the scientific validity of the conferences of which I was also Scientific Organizing Committee, and manager of the double-blind peer review process.
	I also managed a heterogeneous group of Cognitive Scientists for the creation of the directory/community "AiscBook". Using mainly virtual meetings and collaboration systems, I had to keep the group focused on the task, cohesive and motivated.
Nov 2006 - Dec 2013	PhD student for the ANALOGY project (NEST Program, Contract 29088) funded by the EC, at Department of Computer Science and Informatics of University College Dublin, Ireland.
	The aim of my research was to gain a better understanding of the underlying top-down and bottom-up mechanisms of analogy-making and their interaction, and to better understand how analogy-making capacities are used in other cognitive capacities, such as Category Learning.

I developed in C# a machine learning model of analogical reasoning. It was optimized using genetic algorithms to perfectly mimic human learning patterns.

I also developed in C# a new algorithm for the computation of inter-rater agreement using the Fuzzy Kappa, and the evaluation of its statistical significance using MonteCarlo methods. In C# I developed also other software for the simulation of various statistics and the computation of the results of my research.

As result of my research, I published one book chapter in an edited volume, one paper in a peer-reviewed journal, and six papers in peer-reviewed conference proceedings.

I was reviewer for the 29th International Psychology Congress.

Jun - Jul 2008	Consultant for Sincro Consulting s.p.a. I designed and developed in C# a mobile application exchanging data with a Soap backend, for the management of Rfid modules used to record the temperature of perishable goods.
Jun - Aug 2006	Consultant for NdPlanet s.a.s. I designed and developed in Asp.Net, Flash and Soap webservice, the social platform "PeopleGo", including the development from scratch of a Chat application in Flash and Actionscript.
May 2004 - Jun 2005	Consultant for Stas s.r.l. I designed and developed in VB6 a client-server application for the Fax network management (sending, receiving, forwarding and acknowledge).
Feb 2004 - Mar 2005	Collaboration with Ares Tech s.r.l. as Manager of the Educational Division. I recruited trainers and organized the internal and external calendar and requests for the courses.
	In this experience I acquired a good knowledge of the UNI EN ISO 9001 standards, for the Design and provision of vocational training courses.
	I also developed in VB6 a Gui client for the simplified management of software versioning with CVS connected with SSH; and the multimedia company presentation in Flash on cd-rom and web.
Apr - Nov 2003	Collaboration with Cogitas s.r.l., outsourced to TSF s.p.a.
	I designed and developed in Asp, Javascript, DB2, ActiveX, C# Soap webservice, and VB eMbedded, a complex application for the mobile issuing of ferry tickets in Sicily. The application managed the ticketing and accounting, and allowed to print the tickets with a PocketPC mobile system, recording the data with a C# Soap webservice.
	I also took part in the development of the "Ticketless" Trenitalia system, designing the backend webservice in C#.
	I also designed and developed in Asp, Oracle, Html, Javascript an application for the management and issuing of Smart Card Train Passes and Tickets.
Sep - Oct 2002	Consultant for Cogitas s.r.l., outsourced to ENEL Sfera. I developed in VB6, Access, Excel, ActiveX and VBA, an application for the management of course calendars.
Aug 2002 - Jul 2003	Consultant for Doppia Coppia s.n.c., I developed an accounting application in Access and VBA.
May 2002 - May 2004	Consultant for STAS s.r.l., I designed and developed in Access and VBA two applications for the management of the Insurance Policies, the accounting and the communication with clients.
	I designed and implemented the Windows Domain and Security Policy, using encrypted Tcp traffic and encrypted file systems, to guarantee Sensitive Data Privacy.
May 2001	Consultant for Cogitas s.r.l., outsourced to Trainet, I completed (and corrected) the development of a multimedia cd-rom in Flash and Director.
Dec 2000	Consultant for T&T Luiss Informatica, I completed (and corrected) the development of a web application in Asp, Oracle and Javascript.

Nov 1999 - Oct 2000	Collaboration with Engineering Fonderie Multimediali.

I managed a group of 10-15 people, including graphic designers, 3D designers, software developers, testers, storyboarders, writers, sound engineers and speakers, for the development of cd-rom and web multimedia software, courseware and presentations.

I designed and developed web and cd-rom multimedia software (courseware and presentations) in Macromedia Director Lingo, VB6, DHtml, Javascript, VbScript, ActiveX, RealMedia, Flash.

I was the Specialist for Video and Audio Formats, Codecs and Compression. I had the task of choosing the right format and compression for the multimedia software produced, considering the constraints such as cpu power, available disk space or connection speed.

Teaching

Sep 2015 - Feb 2017	Assistant Lecturer of the courses Computer Skills (3 credits) and Computational Lab (6 credits) at the Physics Department of University Sapienza of Rome.
Oct 2006	For Comtaste s.r.l., "Webmaster with Asp.Net".
Apr 2006	For Bludis s.r.l., "Advanced data management with Access and Excel"
Sep - Dec 2005	For Finsa Tech s.r.l., "Application development in C# and Asp.Net"
Feb 2004 - Mar 2005	For Ares Tech s.r.l., outsourced to other companies like Bludis and Global Knowledge:

- MOC 2124 "Programming with C#"
- MOC 2373 "Programming with Microsoft Visual Basic.net"
- MOC 2565 "Developing Microsoft .NET Applications for Windows (Visual Basic .NET)"
- MOC 2310 "Developing Web Applications Using Microsoft Visual Studio"
- MOC 2524 "Developing XML Web Services Using Microsoft Asp.Net"
- MOC 2154 "Implementing and Administering Microsoft Windows 2000 Directory Services"
- MOC 2150 "Designing a Secure Microsoft Windows 2000 Network"
- MOC 2072 "Administering a Microsoft SQL Server 2000 Database"
- MOC 2073 "Programming a Microsoft SQL Server 2000 Database"
- "Developing Web Applications with Dreamweaver MX"
- "Designing Multimedia with Director MX"
- "Programming and Animations with Flash MX"
- ECDL

Aug 2002 - Jul 2003	For Doppia Coppia s.n.c., "Application Development in Access and VBA"
May 2001 - June 2002	For Istituto Meschini, Ares Tech s.r.l., Metacom, Bludis, Hotel Sheraton, Silvio Pellico Informatica, "Il Messaggero" newspaper, Global Knowledge Network:

- "Developing web applications with Dreamweaver Ultradev"
- "Data extraction with Excel"
- "Programming Excel with VBA"
- "Designing and printing with Microsoft Publisher 2000"

- "Graphs and advanced analysis with Excel"
- "Developing and administering Web applications with NT server, IIS, Html, Asp, Javascript and Access"
- "Complete Web Design and Development: Html, Dreamweaver, Javascript, Asp, VbScript, Flash, Photoshop"
- "Developing web applications with Microsoft Visual InterDev"

Education

Ph.D.

2006 - 2013	Thesis title: "A Computational Model of the Emergence of Analogical Reasoning in Category Learning".
	Supervisor: Dr. F. Costello School of Computer Science and Informatics of the University College Dublin. Funded by the FP6 NEST Programme of the European Commission (ANALOGY: Humans – the Analogy-Making Species: STREP Contr. No 029088).
	Principal subjects covered: Computational Models of Human Reasoning, Genetic Algorithms, Advanced Statistical Methods, Programming, Experiments on Analogical Thinking, Cognitive Science, Quantitative and Qualitative Data Analysis, Graphical presentation of statistical data.
	Occupational skills acquired: Dissemination; Outreach; Communication; Public Speaking and Presentation; Drafting, evaluating and revising documents (evaluator and reviewer for international conferences); Information and Data Collection, Analysis and Evaluation; Assertiveness; Proactiveness; Problem Solving.

M.Sc.

2001 - 2006	M.Sc. in Experimental Psychology from "La Sapienza" University of Rome. Thesis on the Complexity and Dimension of Neural Networks. Grade: 109/110.
	Supervisor: Dr. A. Londei
	Principal subjects covered: Neural Networks, Genetic Algorithms, Robotics, Statistics, Cognitive Science, Quantitative and Qualitative Data Analysis, Psychology.

Professional Certifications

March 2009	Microsoft Certified Professional "Developing and Implementing Web Applications with Microsoft Visual C# .NET and Microsoft Visual Studio .NET".
October 2004	ECDL
April 2004	Microsoft Certified Professional "Installing, Configuring, and Administering Microsoft SQL Server 2000 Enterprise Edition" (70-228).

Language Skills

Italian	C2 (mother tongue).
English	C1: TOEFL passed with 102/120, lived and studied in Ireland for 3 years.
Spanish	A2.

Committee and Board Memberships

- Current President of the Association "Scuola Terza Generazione"

- Member of the Board of Directors (2010 - 2013) of the Italian Association for Cognitive Science (AISC)

- Scientific Organizing Committee for the Kreyon 2017 conference, held in Rome, Italy, in September 2017

- Organizing Committee for the AHLM international Conference 2017

- Scientific Organizing Committee for the Aisc 2012 conference, held in Rome, Italy, in December 2012

- Scientific Organizing Committee for the "Pratiche della Cognizione" Aisc VII conference, held in Trento, Italy, in December 2010

- Member of Artificial Intelligence Association of Ireland

- Current President of the Association "Europa Scuola Futura"

- Review Committee for the 29th International Psychology Congress, held in Berlin, in July 2008

- Review Committee for the VI Aisc conference, held in Naples, in November 2009

Publications

Academic

- Bianchi C. (2012). "An Alternative Account on the Origin of Analogical Reasoning". Cognitive Systems 7-3, November 2012, 261 – 273

- Bianchi C. (2010). "Colmare il gap cognitivo tra committenza e software developers". Aisc 2010

- Bianchi C. (2010). "An Alternative Account on the Origin of Analogical Reasoning". Book chapter in "Practices of Cognition: Recent Researches in Cognitive Sciences", University of Trento, Italy, ISBN 978-88-8443-350-3

- Bianchi C. (2009). "Complessità Cerebrale ed Intelligenza: uno studio di Robotica Evolutiva". Proceedings of the Sixth Conference of the Italian Association for Cognitive Science.

- Bianchi C., Costello F. (2009). "An Interactive Test to Study the Relevance of Analogical Reasoning and Concept Separability in Category Learning". Proceedings of the 2nd International Analogy Conference

- Costello F., Bianchi C. (2009). "A Two-Process Account of Analogical Category Learning". Proceedings of the 2nd International Analogy Conference

- Bianchi C. (2009). "Brain Complexity and Intelligence: a study of Evolutionary Robotics". CogSci 2009

- Bianchi C., Costello F. (2008)." Un Modello dell'Emergenza ed Uso del Ragionamento Analogico nell'Apprendimento di Categorie". Proceedings of the Fifth Conference of the Italian Association for Cognitive Science; Sistemi Intelligenti 2009 (3), 405-416

- Bianchi C., Costello F. (2008). "Analogical Reasoning helps learning of Similar Unknown Concepts: the use of Analogies between Categories in Category Learning". Proceedings of the 19th Irish Conference on Artificial Intelligence and Cognitive Science

- Bianchi C., Costello F. (2008). "The role of analogical reasoning in category learning". Proceedings of the 29th International Congress of Psychology

Magazines

October 2005	Editorial coordination, revision, layout and photographs for the book "Un correttore a Roma" by Carlo Sisti, edizioni Eucos, Rome 2005, ISBN 88-88294-20-1.
October 2004 - January 2005	Columnist on the "DEV" computer magazine: monthly column "IT-aliano". Articles published:

- "Capitolo 1"

- "Capitolo 2"

	• "Capitolo 3"
	• "Da un altro mondo"
October 2003 - March 2005	Columnist on the "DEV" computer magazine: monthly column "Palm's Letter". Articles published:
	• "Palm & database"
	• "Scrivere un Web Service client per Palm"
	• "JavaScript per Palm"
	• "Nuovi ambienti di sviluppo per Palm"
	• "NS Basic/Palm 4.0"
	• "Guide a portata di mano"
	• "Rivoluzioni", "Musica Maestro!"
	• "Sviluppatori DOC"
	• "E-Book in tasca"
	• "Jump, SuperWaba & Co."
	• "Notizie dalla casa madre"
October 2004	"Trasformata di Fourier: realizziamo un codec audio in VB", DEV.
September 2004	"Fast Fourier Transform in pratica: un wave player in VB", DEV.
July 2004	"Trasformata di Fourier", DEV.
December 2003	"Video sui cellulari di terza generazione con QuickTime", Computer Programming
October 2003	"Un salvaschermo personale in Flash", DEV
June 2003	"Flash MX: una panoramica", DEV
	"VB: ottenere l'icona predefinita per un tipo di file", DEV

Computer Skills

Statistics and Mathematics

Programs	SPSS, Matlab, Stata, SAS
Methods	Descriptive, Inferential and Multivariate Statistics, Regression Analysis, MonteCarlo methods, Inter-rater reliability (designed and implemented novel algorithms)

Programming

Languages	C#, J2EE, Java (Android), Php, C, HTML, CSS, JavaScript, jQuery, Node.js, VB6, VB.Net, VBA, Flash ActionScript, Matlab, SOAP, Web Services, Asp2, Asp.Net, Mono, VBScript, Dojo, JSON, Director's Lingo, MIDI, XML, XSL, Jsp
Frameworks	jQueryMobile, Meteor, Cordova, Struts2, Hibernate, EJB, .Net, ADO.Net, AdoDB, ActiveX, COM+, ODBC, JUnit, NUnit, MVC, Portlets, Servlets, Liferay, Wordpress, OpenGraph, JDBC, JMS, Log4j, Log4net, multi-tier application servers, Google Maps Api, GIS libraries Leaflet and OpenStreetMap, Ajax, REST
Modelling	UML, E/R (logical and physical)
IDE	Eclipse, Visual Studio, MonoDevelop, FlashDevelop, Dreamweaver

Management

- Agile methodologies (e.g. Scrum)

- Microsoft Project, GanttProject

- Redmine and other CRM, Activity Management, Issue-tracking and Collaboration systems (e.g. Launchpad, Mantis, etc.)

Database Design and Administration

DBMS	Oracle, MySql, PostgreSql, Firebird, SQL Server, Access, SQLite, DB2, MongoDB
Languages	SQL, PL-SQL, T-SQL, OLAP systems
Programs	PowerDesigner, Toad, MySql Workbench, phpMyAdmin, pgAdmin, PowerArchitect, IBExpert, ARGO

Systems, Networking and Security Administration

OS	Linux and Windows servers and clients, MsDos, Apple OS, Android
Services	Active Directory, LDAP, distributed authentication and file systems, SMB, NFS, FTP, SSH, Apache, IIS, Weblogic, routing, mail servers (e.g. Postfix), VoIP and SIP (e.g. Asterisk), fax servers (e.g. Hylafax), version control (e.g. SVN, CVS, GIT, SourceSafe), OwnCloud, REST
Remoting	OpenVPN, Microsoft VPN, Hamachi, Remote Desktop (RDP), VNC, NoMachine NX, Radius
Virtualization	Microsoft Virtual Server, VMware Server, Sun Virtual Box, KVM, Xen
Security	Symmetric and Asymmetric encryption systems (AES, SHA, Blowfish, Twofish, RSA, etc.), blockchain systems, encFS, TrueCrypt, LUKS, public key infrastructures (PKI) and certification authorities management, GnuPG, IpSec, SSL, TSL, SSH, firewalling, VPN security enforcement, backup and recovery technologies
Protocols knowledge	LDAP (i.e. ASN.1/BER), HTTP, SMTP, POP3, Tcp-Ip, MIDI, SOAP, FTP

Multimedia

- Premiere, Kdenlive, Flash, Flv, Mpeg-1, Mpeg-2, Mpeg-4, H.264, H.265, Windows Media, RealMedia, Macromedia Director (Shockwave), QuickTime, 3D Panoramas, Audacity, DivX, XviD, Flash Media Live Encoder, Adobe SoundBooth, SoundForge, streaming technologies, DVD mastering, Jack, ALSA, Fluidsynth, MIDI

Graphics and Design

Raster	Photoshop, Gimp, Paint Shop Pro, Corel Draw, Fireworks
Vector	Flash, Illustrator, Inkscape
3D	Blender, MakeHuman, Hugin
Publishing	QuarkXPress, Scribus

Office Automation

- Microsoft Office, OpenOffice/LibreOffice, Google Drive, Acrobat Distiller, PDF Creator, Outlook Express, Thunderbird, Outlook, Eudora, Lotus 123