Curriculum Vitae

PERSONAL INFORMATION

Salvatore La Bua

Termini Imerese, Italy | Kyoto, Japan

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http://www.slblabs.com

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Skype slbwirefly | Line slabua

Sex Male | Nationality Italian

EDUCATION AND TRAINING

2017 **Computer Science Engineering for Intelligent Systems** 110/110 cum laude

University of Palermo, Italy

- Thesis in Robotics on Design and Implementation of Modules for the Extraction of Biometric Parameters in an Augmented BCI Framework.

Principal subjects covered:

- Artificial Intelligence
- Network Security
- Computer Graphics
- Computer Architecture
- Quantum Information
- Robotics
- Cryptography
- Image Processing
- Signal Processing
- Mobile Networks

2004 **Computer Science Engineering** 110/110

University of Palermo, Italy

- Thesis in Artificial Intelligence on an Intelligent Interrogation System upon official documents of the European Parliament.

2000 **Industrial Electronics Technician** 98/100

IPSIA Salvo D'Acquisto, Termini Imerese, Italy

1998 **Electronics Operator**

IPSIA Salvo D'Acquisto, Termini Imerese, Italy

WORK EXPERIENCE

1998 – 2000 **Internship**

ENEL S.p.A., Termini Imerese, Italy

- Twelve-week internship for a total of 480 working hours at: ENEL Centrale Termoelettrica Tifeo di Termini Imerese (ENEL Thermoelectric Power Plant Tifeo of Termini Imerese) as part of the educational offer for the fourth and fifth years at the IPSIA Istituto Professionale Statale per l'Industria e l'Artigianato (Professional Institute for Industry and Crafts) Salvo D'Acquisto of Termini Imerese (PA). The internship was supported by its training course in order to acquire experience as Expert of Corporate Security.
- During the internship I actively participated and contributed to all the different roles within each department of the company, letting me maximise the working experience by acquiring group work skills and a wider sense of responsibility.

Energy industry

THESIS AND PUBLICATIONS

Master Degree Thesis

Thesis in Robotics on Design and Implementation of Modules for the Extraction of Biometric Parameters in an Augmented BCI Framework.

Introduction to the thesis:

- The UniPA BCI Framework is an augmented framework based on the P300 paradigm and allows a user to select individual actions to be performed by a robot or, in the more classic configuration, to spell a sequence of symbols.
- The framework takes advantage of additional developed modules, which perform the acquisition of eye gaze coordinates and biometric signals.
- The use of such modules allows to achieve a combined response which does not only take in account the response of a traditional BCI system based on the P300 paradigm, but it also considers useful information, such as the user visual focus and her level of engagement with the system, providing a more robust and effective global response.

More information at http://www.slblabs.com/projects/unipa-bci-framework

Bachelor Degree Thesis

Thesis in Artificial Intelligence on an Intelligent Interrogation System upon official documents of the European Parliament.

Introduction to the thesis:

- LSA-Bot is a new, powerful kind of Chat-bot focused on Latent Semantic Analysis. Using LSA it is possible to relate words to their vectorial representation, permitting to realize an intelligent chat-bot that can understand human language and can answer to natural language questions as well.
- LSA-Bot is written in Java and it works thanks to the LSA (Latent Semantic Analysis) theory applied to a large amount of text documents (corpus). There are many chat-bot systems, most of them are using the AIML language to recognize users' questions. Such bots can answer to the users, though the botmaster has to think about all kind of questions a user could possibly ask to the bot.
- Using LSA is possible to give some intelligence to the chat-bot, permitting to ignore, for instance, wrong words, stop-words and everything that is not needed for the deep meaning of a sentence.

More information at http://www.slblabs.com/projects/lsabot

Publication

Conference Paper: *Volumetric Bias Correction*, Springer, 2007.

Authors: Edoardo Ardizzone, Roberto Pirrone, Salvatore La Bua, Orazio Gambino.
DOI: 10.1007/978-3-540-71457-6_48 · Source: DBLP, ACM
Conference: Computer Vision/Computer Graphics Collaboration Techniques, Third International Conference, MIRAGE 2007, Rocquencourt, France, March 28-30, 2007, Proceedings.

Abstract:

- This paper presents a method to suppress the bias artefact, also known as RF-inhomogeneity, in Magnetic Resonance Imaging (MRI). This artefact produces illumination variations due to magnetic field fluctuations of the device. In the latest years many works have been devoted to face this problem. In this work we present the 3D version of a new approach to bias correction, which is called Exponential Entropy Driven Homomorphic Unsharp Masking (E^2D-HUM). This technique has been already presented by some of the authors for the 2D case only. The description of the whole method is detailed, and some experimental results are reported.

Notable coursework project

DicomReader is a simple Java DICOM files decipher and it has been developed as part of the Volumetric Bias Correction paperwork.

Introduction to the project:

- DicomReader handles headers as well as images contained in the Dicom files; data (headers and pixel-value images) will be saved into ascii plain text files. A pgm version of the image files can be also provided as an option for the user.
- The graphical user interface, based on Swing components, allows the user to choose the file names where headers and images will be saved to. If a pgm image is also desired, its name is automatically generated from the ascii text image's file name.
- DicomReader needs a Dicom dictionary in order to work, where it can read Dicom tags from and take the correct action for each of them, accordingly.
- If multi-sliced Dicom files are provided, results will be saved with the same file basename selected in the user interface and a sequence number will be appended at its end, keeping the original file name extension unchanged (if provided by the user).

More information at http://www.slblabs.com/projects/dicomreader

INDEPENDENT COURSEWORK

2012 **Certificates of accomplishment**

Udacity, Computer Science

- Introduction to Artificial Intelligence
  - Stanford University - ex ai-class course
- Artificial Intelligence for Robotics: Programming a Robotic Car
  - Stanford University / Udacity - CS373
- Introduction to Computer Science: Building a Search Engine
  - Stanford University / Udacity - CS101

2011 **Certificates of accomplishment**

Coursera, Computer Science

- Machine Learning
  - Stanford University / Coursera - ex ml-class course
- Introduction to Databases
  - Stanford University / Coursera - ex db-class course

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C1	C1	C1
Japanese	A2	A2	A1	A1	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

- Good interaction with the members of a work group thanks to the experience gained while being part of group projects held during the courses attended at university.

Organisational / managerial skills

- Good management of the workload and tasks subdivision among the group members, defining priorities and level of detail for each task to be assigned.
- Good orientation to explain concepts in an effective way, simple yet concise, starting from a global vision of the concept itself, adapting the abstraction level to the actual necessities and going further down into details when required, thanks to the experience gained in group projects at university and own extracurricular tutor activities to high school and university students.

Job-related skills

- Good problem-solving skills.
- Good adaptation and integration to new environments, tools, and situations.

Digital skills

- During the course of the academic studies I have learned to program in different programming languages, including C, C++, Java, Python, LISP, Matlab. Past experiences also on Basic, QuickBasic, VisualBasic and specific languages such as SQL, Gams, Prolog, S-Golog, UML, XML, AIML.
- Capable to use, operate and appropriately configure Windows and Unix-like systems, especially rpm and deb based Linux distributions, including Fedora and Ubuntu, or resource critic devices such as Raspberry Pi hardware running Debian derived Linux distributions.
- Good knowledge of graphic software such as The Gimp, Adobe Photoshop, and 3D modelling software, in particular Blender 3D, thanks to own hobby related experience.
- Fair knowledge of office productivity software such as OpenOffice / LibreOffice and Microsoft Office, specifically on their word processing and spreadsheet applications.

Academic research interests

- Artificial Intelligence
- Machine Learning
- Human-Robot Interaction
- Cognitive Robotics
- 3D Computer Graphics
- Cybernetics
- Cryptography
- Networks
- Robotics
- Deep Learning
- Brain-Computer Interfaces
- Image processing
- Biomechatronics
- Neuroprosthetics
- Algorithms
- Autonomous Vehicles

- I am looking forward to starting my PhD, hopefully with interesting opportunities abroad, in particular in Japan: I think it is a wonderful place where I would love to spend my life in. I have lived in Kyoto for a month.

Hobbies and interests

- I like drawing and I would also like to try painting, sculpting and hand-crafting in general.
- Besides traditional visual fine art, I also enjoy digital drawing / painting / texturing using mainly The GIMP, Photoshop, and 3D modelling using Blender 3D with interest in the possible integration of 3D modelling with educational or gaming platforms. I tend to use free and open source software when possible, though, each tool is suitable for the particular task that it is needed for.
- I am interested in photography and architecture, and I am an attentive observer of everything that surrounds me. I would like to have time to travel and see places around the world.
- I am interested in learning about Japan, the Japanese language, culture, lifestyle and job opportunities. I am especially interested in doing academic and industrial research in Japan, mainly on Robotics and Artificial Intelligence.

Driving licence

Driving licence:	European	B	(exp. 2020.10.20)
International driving licence:	Geneva 1949	B	(exp. 2018.03.30)

PROFESSIONAL AND ACADEMIC PROFILES

LinkedIn: https://goo.gl/4xxKOJ

ResearchGate: https://goo.gl/yysIYC