Mr. Gianni Pucillo (Italian Nationality)

PROFESSION	Software and Embedded Software Engineer
PREFERRED JOB	High-tech software development

WORK EXPERIENCE

May 2024 – July 2024
May 2023 – November 2023

Software Engineer
Brunel's employee – working on project at BCS – Lower Saxony, Germany

Metrics application as BCS' internal tool:
- Tool to measure software quality for C, C++, C#, Python and Java languages
- Tools: nodeJS, bugzilla, grunt, npm, Visual Studio Code
- Programming language: javascript
- Integration: Visual Studio 2017, Eclipse, PyCharm
- Other keywords: SVN, CVS, Github, Understand

Sector Software engineering

November 2023 – April 2024

Embedded Software Engineer
Brunel's employee – working on project at BCS – Lower Saxony, Germany

Embedded software developer for BCS' military customer:
- Driver development for high speed video application
- Tools: Petalinux (Xilinx), Linux Ubuntu, Eclipse, Git
- Programming language: C
- Hardware: Zynq UltraScale+ MPSoC ZCU102
- Hardware: Enclustra Mercury+ XU7 Xilinx Zynq UltraScale+ MPSoC

Sector Software engineering

November 2022 – April 2023

Software Engineer
Brunel's employee – working on project at BCS – Lower Saxony, Germany

XML data compiler for RaSTA for BCS' railway customer:
- Developed 3 XML data compiler for 3 Object Controller
- Tools: Visual Studio 2017, CVS, Code Analyzer, StyleCop
- Programming language: C#
- Other keywords: RaSTA, XML library for C#

Sector Software engineering

July 2022 – October 2022

Software Engineer
Brunel's employee – working on project at BCS – Lower Saxony, Germany

RaSTA software refactoring for BCS' railway customer:
- Tools: Eclipse, CVS
- Programming language: C
- Other keywords: RaSTA, MisraC and CENELEC standards

Sector Software engineering

January 2022 – July 2022

Embedded Software Engineer
Brunel's employee – working on project at Siemens Mobility – Prague – Czech Rep.

Embedded Software Engineer for TrainIT:
- Windows 3.11, VMWare, Borland C/C++ compiler 4.52, SAP, MKS
- Programming language: Toolbook 1.5 and OpenScript language by Asymetrics, C/C++
- Hardware: Windows 10 computer
- Other keywords: regression testing training

Sector Software engineering

October 2021 – December 2021

Embedded Software Engineer

Brunel's employee – working on project at Siemens Mobility – Prague – Czech Rep.

Embedded software developer for Siemens train control:
- Atollic TrueSTUDIO, STM32 with Debian Linux, C/C++, assembler
- bash, Gitlab, Ubuntu OS & Windows 10, VMWare and VirtualBox
- STM32 and Yocto Linux
- two trainings on Electrical certification paragraph 4th, Microsoft2/5
- VISIO, Jira, Confluence & SharePoint

Sector Software engineering

July 2020 - September 2021   **Self-employed**

- Improving English and German language skills through individual classes
- Analysis and studies on Full Stack frameworks interconnection:
  - IBM Mainframe
  - Web technologies
  - Low-level software engineering
  - 2D & 3D computer graphics
- Developing a new product in the Full Stack Web Technologies framework

Sector Software engineering/Semiconductor/Mainframe/Computing/IT

April 2019 – June 2020   **CA Technologies in Prague (Broadcom) - R&D Senior Software Engineer**

- Senior player in SAFe and DevOps teams
- Contributor to Open Mainframe Project's *Zowe* and Eclipse Foundation Project's *Eclipse Che*
- Contributor to *CA Endevor* product and team
- R&D of tools for IBM z/OS Mainframe developers
- Worked with HLASM & COBOL, back-end/front-end tools, cutting-edge web technologies, etc.
- Earner of Foundations for Mainframe Development: z/OS, JCL, REXX, Assembler, Design thinking, Agile and Design thinking, TPX, TSO/ISPF, etc.

Sector Mainframe/Computing/IT

January 2014 – March 2019   **Software Engineer, Independent Contractor**

- **IoT** and **embedded systems**: knowledge and skills improvement, updating to the new *hardware*, *software* and *OS/RTOS* technologies, small projects design and realization
- **3D/2D graphics** and **DSP**: small consultancy and web application/utilities development
- Studies and updates on **Hard/Soft skills** theories and applications: SDLC, guideline, protocol, standards, etc.

Sector Computing/IT/Semiconductor

April 1995 – January 2014   **Software Engineer, Independent Consultant and Contractor**

Some of the most important software solutions developed by me:

- 1992 - 2014: real-time interactive 3D scene graph engine and ROS for VEGA space launcher virtual reality simulator: DOS and Windows
- 1996 - 2013: development of embedded system firmware, RTOS and PC applications for SCADA systems: DOS, Windows, MON186, µC/OSII, OpenAT
- 2002 – 2007: listen & Locate (LandL) for police investigation. Developed under Windows with map navigation; multi-GPS and multi-GSM, voice recorder, conversation transcription, multi-thread, etc.
- 1995 - 2014: real-time interactive 3D scene graph engine and ROS application for Virtual and Augmented Reality with real-time 3D script: DOS and Windows, LabVIEW, Mathematica, Matlab, Maple
- 1996 – 2008: SirioCL Chrominance and Luminance measurement application in place of a spectrophotometer
- 1995 – 1999: MGA-K2D: 2D graphic library with real-time graphic script language for Matrox MGA graphic board under DOS and LynxOS

Sector Computing/IT/Semiconductor/Aerospace/Automation

| December 1984 – March 1995 | **Product Manager and Specialist, Software Engineer, Hardware maintenance, field application engineer** |

3G-electronics MATROX ITALY and four different employers in Rome, Milan and hinterland

Many learning and work experiences opportunities, on *hard-skills* and on *soft-skills*. Worked and influenced big industry companies (i.e. Matrox, Mitsubishi, Hitachi, JVC, etc.) culminating in the developing of the Term3D multi-stage 3D graphic rocket simulation application for *BPD Defence and Space* (ELV, Avio-Spacelab in Colleferro, Rome), "launching" my own company

Meetings, courses, autonomous studies, technology passion, leads me into the holistic mindset of hardware and software relation

Sector Import, distribution and technical support of high level IT products/Semiconductor.

PERSONAL SKILLS

Languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Good	Advanced	Good	Good	Advanced
German	Advanced Beginner				
French	Good	Advanced	Good	Good	Advanced
Czech	Beginner				
Spanish	Advanced Beginner				
Italian	Native language				

Communication	A very good level of communication based on soft-skills knowledge
Organisational and Managerial	▪ Knowledge of Agile as a team player and application of SCRUM, V-Model, TDD, Kanban, Waterfall ▪ Tools such as Project Management, UML, Mind Mapping, BT, IT, VCS, CMS, etc. ▪ Coded *ad-hoc* software utilities like small CASE tools, organizers, PDA, planners, etc.
Job-related skills	Considerable experience and in-depth knowledge in hardware maintenance and in office and productivity software, wide exposure to Electronics issues**
Other skills	Good manual dexterity in routine maintenance especially in Electrical/Electronic tasks
Driving licence	B

EDUCATION AND TRAINING

| September 1979 – July 1984 | **Expert in Electronics and Information Technology** |

High-school diploma awarded at Experimental Technical Institute "Claudio Varalli" of Bollate (Milan)

ADDITIONAL INFORMATION

Publications

▪ *Born from cathodic protection*; JCE Group - Industrial Automation, Milan, 2003
▪ *Interactive prototype*; JCE Group - Industrial Automation, Milan, 2003
▪ *One application, three monitors*; JCE Group - Industrial Automation, Milan, 2004
▪ *Beyond the spectrophotometers*; JCE Group – PuntoMIL, Milan, 2004

Presentations

▪ ENEA, Robotic Department, Rome, 2006: *VisProject: a real-time interactive full graphic 3D processor and simulator*
▪ Brunel Car Synergies, Hildesheim, 2023: *Metrics, measuring the quality of the software*

ANNEXES

* Skills and knowledge
** Skills and knowledge in Electronics

Other information

▪ More details are available at: giannipucillo.it/career

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	skype: gianni.pucillo – Linkedin: giannipucillo

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Skills and Knowledge

- **Application developed**: 6 languages software metrics, 3D scene graph and ROS, embedded software, OpenGL script & interpreter, SCADA, DSP, firmware, police investigation

- **Algorithm and API developed**: OTA programming, data persistence, nesting, collision detection, direct and inverse kinematics, multi-tasking, VRML parser, 3D object reconstruction, File Systems, NoSQL databases, etc.

- **Libraries & drivers, interfaces, COTS, utilities developed**: Hitachi photo-printer, Mitsubishi sublimation color printer, JVC high-definition color camera; MOS Technology 6502 compiler; high-resolution CRT color monitor calibration probe; 2D graphic SDK (MGA-K2D) and 3D/OpenGL graphic SDK

- **Languages, interfaces, protocols, standards, guidelines, buses**: C, Assembler, WebAssembly, C#, C++, ADA, Java, Android, Kotlin, Perl, Python, VBA, Fortran, Basic, Pascal, Prolog, IBM Cobol, REXX, IBM JCL; DPMI, DMA, PIO, interrupt handling, multi-thread; IPC; Maple 8 and Wolfram Mathematica 5; 3DS, IGES; TCP/IP, UDP/IP, CSS/HTML, *JSON, NodeJS, Npm, React & Native,* VRML, LaTeX, XML, SMTP, socket & winsocket; SQL, NoSQL; MongoDB, Access, Postgres; RS232/RS485, GSM and GPS; MIL-STD-1553, ARINC 429, Spacewire, CAN, SPI, I^{2}C, MVB, Modbus, UART, USB, Ethernet, IEEE-488 (GPIB), SCSI; Bluetooth & BLE, WiFi, RFID & IR; Swagger; MEAN, MERN; OpenScript by Asymetrics

- **Libraries and scripting languages**: Microsoft XML, libpcap & winpcap, 3D SXCI Matrox library, Silicon Graphics OpenGL/GLU; Canvas 2D, SVG, ThreeJS, WebGL, Matrox's imaging, video, 3D and 2D graphic libraries; Prof-UIS GUI; Halo graphic; Microsoft SDK, MFC, STL; MapPoint and Navigator maps; Javascript, Typescript; REST/API, SaaS; DOS batch; UNIX/LynxOS vi, bash, sh, sed, grep, Grunt, etc.

- **Models, paradigm, methodologies, concepts**: MisraC, CENELEC, ISO/OSI, V-Model, W-Model, DDD, TDD, BDD, CI & CD, Agile Scrum & Kanban, DevOps, Software Testing (regression and smoke), Waterfall, project management, software architecture, requirements gathering, changing and management, technical specification definition, etc.

- **SDLC tools**: Atollic TrueSTUDIO, Eclipse; Arduino IDE; Qt, IntelliJ, GPS; ESP-IDF; Metaware, Intel, VScode, Theia, Visual Studio C/C++ & .NET up to 2019, StyleCop, Code Analyzer, Wavecom OpenAT, Watcom C/C++; Zworld DynamicC; AMD/Falcom MON186; Microsoft and Pharlap Assembler; cMake, Ant, Maven, Gradle, command line build & debug tools, GCC, GDB, script & batch files, makefile, local and remote debugging; LabVIEW CGI, VI and C interface; Cygwin, MinGW; GIT, SVN & CVS; MantisBT, Bugzilla, Wolken, Redmine; Jenkins; IBM Rhapsody, IBM DOORS & RM, UML, ER modeling, UMLet, MagicDraw, SmartDraw, EdrawMax; Rally, JIRA, Podio; Doxygen; IBM 3270 terminal emulator; CA Endevor; XDC, TSO/E, ISPF, SMP/E; Zowe; JUnit, Jest, CUnit, Borland C/C++ compiler 4.52; Toolbook 1.5; MKS

- **Hardware, µProcessor & µController, GPU, SoC, SBC, OBC**: Zynq UltraScale+ ZCU102, Enclustra Mercury+ XU7 Xilinx Zynq UltraScale+, STM32, Raspberry PI, Espressif ESP32, Rabbit Semiconductor R3000, ARM; LP3500 and RCM3700; AMD186ES; Falcom, Wavecom, Siemens, Ericsson intelligent GSM/GPS/GPRS; Z80, MOS Technology 6502; Intel x86; Matrox MGA graphic chip series (Titan, Athlas, Dubic, Athena, Storm, MGA-2064W formally Millennium, non disclosure agreement); S3 Graphics chip series; Matrox's 3D, Image and Video boards; JVC's highres cameras; AT, VESA, MCA, PCI Bus; NI I/O boards AT-DIO-32F, RT7030 OBC with 6533 I/O module; Intel 8255 and MCS-48; TIGA TMS34010 and TMS34020 graphic processors; *FPGA & Verilog & VHDL*

- **Electronics equipment, peripheral, IC blocks, datasheet**: timers, ADC, DAC, PWM, sensors, motors, encoder, CAN transceiver, transducers, PLC, … more

- **Operating Systems, networks, clouds**: IBM z/OS, MS Windows from 3.11, FreeRTOS, RTEMS, LynxOS X11, Petalinux, Debian embedded, Raspbian, Linux (Ubuntu, Mandrake, Red Hat, Suse, Kodi, Debian, Kali) and LFS, VMWare, VirtualBox, Micrium µC/OS-II, CP/M, IBM PC DOS, MS-DOS, Pharlap and Rational DOS Extender, IBM OS/2; 10NET, Novell; Apple II & III, Macintosh "classic" MacOS; Commodore, Amiga, Olivetti P6060; IBM AS400 & System 35; Digital PDP11; AWS (Alexa/Echo dot skills)

- **High-tech software applications**: Understand, CA Endevor SCM, ProjectLibre and MS Projects; MS Visio; Confluence, SharePoint; SAP; Freemind; Altia, Matlab, Maple, LabVIEW & LabVIEW RT; Mathematica; Autocad and 3D-Studio, Unity 3D, Unreal Engine, Blender, Crystal Graphics Topas and Topas Professional (March and July congratulation fax), Caddy, Cadence, Microstation, ComputerVision, Nemetschek Allplan, 3D-Designer, Arc+, Kinetix 3D Studio Max, Ziegler Signalys DSP, Twine, OrCAD

- **Most important business entities**: Brunel, BCS, IBM, **Matrox**, Broadcom Mainframe, Siemens Mobility, Sirio Panel, **BPD Defence and Space**, Fiat Auto, **Fiat Avio**, **ELV** (European Launch Vehicle), Avio-Spacelab, Minardi F1, Ansaldo, Mitsubishi, Hitachi, JVC, Autodesk, Wolfram Research Italia, National Instruments, Crystal Graphics, Altia, Gilardoni, Maplesoft, Nemetschek, Politecnico di Milano, Esercito Italiano, Marconi Group, Zworld, Falcom, Wavecom, Siemens, Ericsson, Olivetti, Intel, S3 Graphics, Philips

- **Software applications**: Excel (spreadsheet), Word (word processor), PowerPoint (presentation), video editing, picture editing, database, web editors, Apple II/III and Macintosh system and office software products

Skills and Knowledge in Electronics

➢ Certificate of professional qualification in electrical engineering of Decree No 50/1978 of the Czech Office for Occupational Safety and the Czech Mining Authority, Section 4

➢ small PCB design and realization also using Electronics CAD

➢ reading schematics & device datasheets; worked with JTAG and older CPU emulator probes

➢ use of lab instrumentation such as oscilloscope, wave generator, logic analyzer, digital/analog multimeter

➢ support and repairing of Matrox graphics boards

➢ designed and prototyped analog and digital cables like RS232, RS485; ad hoc I/O cable to connect intelligent GSM, Z80, RCM3700 and LP3500, SBCs, Raspberry PI, ESP32, CAN transceiver, GPS; graphic boards' cables and switches

➢ maintenance of AT, VESA, MCA, PCI and other expansion boards for PC

➢ 40-wire parallel cable designed to interface National Instruments AT-DIO-32F and Intel 8255 based boards, to ELV I/O boards (VEGA launcher project), designing and implementing a bespoke 32 bit parallel high-speed data transmission

➢ Three-roller calender for metal pipes manufacturing, based on MOS Technology 6502 microprocessor, with rotary and linear encoders and two motors for each roller

➢ Ultrasound soldering machine for plastic materials (6502 based) with motorized soldering head, head pressure sensor, time based ultrasound emission

➢ X-ray photograph conveyor belt (6502 based) equipped with rotary and linear encoders, backlighted panel and two motors

➢ PROM-EPROM-EEPROM programming and substitution; microprocessor and integrated circuit handling such as memory upgrades, coprocessor installation, etc.

➢ mounting and maintenance of PC keyboards and 6502 based PLC