PERSONAL INFORMATION

Daniele Biancu

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Sex Male | Date of birth 03/01/1974 | Nationality Italian

WORK EXPERIENCE

16 May 2024 - Present

Senior Ground Segment System Engineer

Freelance

Support the development and maintenance of ground segment systems for Earth observation and positioning. I employ a Model-Based Systems Engineering (MBSE) approach to enhance system design, integration, and performance, ensuring the delivery of cutting-edge solutions for complex projects. My role involves not only technical expertise but also leadership and problem-solving skills to drive projects toward successful outcomes. I am responsible for the coordination of technical resources and the management of delivery schedules, ensuring alignment with mission requirements.
Supported missions: BIOMASS, NAOS
Business or sector Space and defence

01 September 2020 – 15 May 2024

Senior Ground Segment Engineer

RHEA Group
Support for:

- Support to the preparation of Invitation to Tender
- Definition and evolution of a PDGS Operational Reference Model and Operational Architecture
- Definition and evolution of the End-to-End operations management processes and tools
- Definition of mission PDGS operations concept.
- Support to mission operations
- Definition of requirements for PDGS End-to-End Monitoring tool
- Support on the coordination of the activities with third party for the implementation, maintenance and evolution of the PDGS End-to-End Monitoring tools
- MBSE support and trainings
- System/software engineering support to EO missions

Supported missions: EarthCARE, BIOMASS. Flex, TPM
Business or sector Space and defence

15 March 2020 – 31 August 2020

Data Processing and Supporting Applications Engineer

WGS Workgroup Solutions GmbH

I am responsible to provide service in the area of Data Processing System Engineering. Main Tasks:

- Contribute to the operations of existing data processing facilities based on K8s and their maintenance and evolution
- Follow-up facility, sub-segment and ground segment integration and verification
- Review of data packs from subcontractors
- Contribute to the facility handover to operations team
- Management of requirements
- Definition of ICDs
- Definition of Operational scenarios
- Trade-off solutions

Supported missions: EUMETSAT Multi-mission Elements
Business or sector Space and defence

01 April 2018 – 15 March 2020

Service Manager/Technical Lead Manager

SCISYS Deutschland GmbH

As Service Manager, I am Responsible of managing and coordinating the performance of the key persons working at EUMETSAT. Main tasks:

- Distribution tasks and actions
- Follow-up, monitoring and managing the execution of each work package
- Delivering progress report with the actual effort spent by the full-service team

As Technical Lead Manager, I am responsible for the maintenance and evolution of elements part of the Galileo ground segments using waterfall and agile approaches, the work includes:

- modelling of the overall ground segments
- Planning activities of subcontractors
- Review of the deliveries of subcontractors
- Analysis of the user requirements
- Migration of physical system to virtualised ESXI environment
- Lead the activities for the verification of new systems
- Follow the recruitment process of new employees

Supported missions: Galileo
Business or sector Space and defence

11 January 2016 – 01 April 2018

Data Processing System Engineer

He Space GmbH (Germany) for EUMETSAT

Responsible for the definition of requirements, activities, deliverable and timelines for project that are open to a competitive tendering.
Responsible of the coordination of the activities with the industry for the implementation, testing and deployment of EUMETSAT Multi Mission Elements.
Main activities:

- Analysis of the requirements
- Review of the documentation
- Planning activities
- Liaising with EUMETSAT staffs concerning ground systems and horizontal services
- Lead the activities for the integration of the new facilities

Engineering support to Copernicus Sentinel 3 on the activities regarding the evolution of the system to support the S3B data processing.
Main activities:

- Lead the activities for the installation of the S3B software on the operational platform
- Lead the activities for the verification of the new system
- Collaborate on the activities for the integration of the S3B ground station
- Lead the activities for the preparation of the PDGS commissioning and rump-up plan

Support the EPS team during nominal and testing activities:

- Perform daily checks on the QCF and CVF
- Investigation of problem occurred
- Configuration of new dataflows
- Support during the execution of Metop-C tests.

Responsible of the development of reports for the analysis of the status of both instrument and platform of the Copernicus Sentinel 3 satellite.
Responsible of assuring the correct execution of the operational and reference processing chain of Copernicus Sentinel 3 mission.
Main activities:

- Assurance of the correct execution of the operational and reference processing chain
- Analysis of production to identify possible gaps and performances degradation
- Support for the fine tuning of the data processing system to improve mission performances.
- Design, implementation and test of Mission Performance Monitoring tools

Supported missions: Sentinel 3, MSG, MTG
Business or sector Space

03 August 2014 – 11 January 2016

Project Engineer/System Architect

CGI UK Ltd (UK)
Responsible for the preparation of technical proposal in answer to ESA invitation to tender
Main activities:

- Analysis of the requirements
- Definition of the solution
- Definition of the activities to be performed by the industry

Responsible of the development and maintenance of the ESA Multi mission distributed archive system. Main activities:

- Analysis of the ESA requirements
- Work Packages definition
- System requirement definition
- Technical Budget
- Trade-off analysis
- Architectural Design

- Interface definition
- Support for the definition of new functionalities
- Migration of the archiving system to Interoute cloud
- Responsible of the development and maintenance of the ESA Multi mission archive system.

Supported missions: ESA Multi-mission Elements
Business or sector Space and telecommunications

11 November 2012 – 30 July 2014

Ground Segment Operations Engineer/Software System Engineer

ISDEFE Ingeniería de Sistema para la Defensa en España (Spain) [former INSA]

Responsible of developing the operational plan of PAZ mission ground segment, following the ECSS quality standard. Developed tasks include team workload analysis and responsibility allocation, in addition to system component need identification and gap analysis.
Work activities are developed within the development and the Assembly Integration Validation (AIV) team and consist of:

- Definition of system and operational concepts
- Consolidation of the system and software requirements
- Review of ground segment functionalities
- Review of subsystem functionalities and interfaces
- Support for the definition of new functionalities
- Support to the development of new features
- Identification of nominal and contingency scenarios
- Identification of operational priorities
- Development of operational solutions
- Implementation of contingency procedures
- Identification of team roles and responsibilities
- Support to the AIV team during verification, testing and reviews, including definition and preparation of test data, test cases and scenarios

Supported missions: PAZ
Business or sector Space and defence

15 April 2009 – 10 November 2012

Operation Service Engineer/Data Processing Pipeline Engineer

INSA Engineering and Aerospace Service SA (Spain) for ESA

Responsible of assuring the correct execution of the nominal, near real time and reprocessing chain; assigned tasks include analysis and report of the on-board anomalies affecting data production.
Main activities:

- Assurance of the correct execution of nominal, near real time and reprocessing chain
- Analysis of anomalies in the data transmission and on-board memory fault
- Analysis of production to identify possible gaps and performances degradation
- Hardware inspection and analysis of alarms
- Design, implementation and test of the operational Level 0 reprocessing facility Distributed application on cloud as a service
- Generation of internal report describing the status of the overall system, problem reports, and operational procedures
- Contribution to consolidating the system and software requirements
- Definition of test data and test cases
- Support to contractors during the verification and testing
- Support to ESA's staffs during reviews and definition of new functionalities
- Support to the development of new features

Supported missions: SMOS
Business or sector Space and defence

22 May 2006 – 01 April 2009

Project Engineer

GMV Space and Defence SA (Spain)

Responsible of the design, development and validation of the SMOS Level 3/4 production data centre according to the ECSS standards with the following responsibilities:

- Design and implementation of the processors for the generation of Ocean Salinity and Soil Moisture global maps using multithread techniques
- Definition of the responsibility of the SMOS CP34 production centre
- Technical responsible for the processor infrastructures
- Support to the science community during the generation of the user requirements
- System requirement definition using DOORS
- Study and analysis of the system and SW performances

- Product format specification
- Development of scientific tools

Responsible of the SMOS Level 1 operational processor development and validation.
Main activities:

- Study and implementation of numerical algorithms to translate the ancillary packets into ready to use data in standard engineering units
- Implementation of the algorithms to compute the complex correlations and autocorrelations and quadrature corrections
- Study and implementation of the image reconstruction module to convert the calibrated visibilities into brightness temperature Fourier components using multithread techniques
- Study and analysis of the algorithm performances
- Support to the definition of the processor infrastructures
- Definition of the software architecture using UML
- Support to the development of an efficient multithreading system
- Support to the configuration of test environment for unit tests, integration test and dry-runs
- Definition of test cases and corresponding test data

Supported missions: SMOS
Business or sector Space and defence

01 September 2003 – 08 May 2006

Software Engineer

INAF – IRA, National Institute for Astrophysics – Institute of Radio-astronomy (Italy)

In the context of the VLBI, Very Large Baseline Interferometer project:

- Study of proper motion and parallaxes of AGB stars
- Study of VLBI Data processing and data reduction techniques
- Specification, design and implementation of PAips an interface for AIPS written in Python. This software allows the astronomers to generate pipelines for AIPS tasks

In the context of the SKA, Square Kilometre Array project:

- Specification, design and implementation of a Unix based digital antenna correlator over a PC cluster connected through a Lan. This is a distributed multi-process application written in C
- Study of numerical algorithms for the analysis, the restoration and the reduction of radio astronomical data (signal processing)
- Design and implementation of a distributed application (using clusters) in Glish, C++ code for the analysis of potential capabilities of radio-antenna arrays
- Study and analysis of the capabilities of MAPS astronomical simulator software
- Investigation of problems and bugs in the AIPS++ environment
- Creation of on-line technical documentation

In the context of the AstroMD project:

- Development of a relativistic source (nebulae and galaxy clusters) 3D-reconstruction software application. Programming languages used (with portability in mind): Tk-Tcl for user interface, C++ for the rendering and algorithm calculus
- Algorithm development and testing to improve calculus and processing performance in collaboration with Cineca researchers
- Astronomers support for the development and implementation of astronomic data processing algorithms

Business or sector Radio-astronomy

01 October 2002 – 31 August 2003

Software Engineer

ATS, Accenture Technology Solutions (Italy)

- Evaluation of the project feasibility and contribution for the development of new features
- Software testing and management
- SQL Server database administrator
- Implementation of a distributed multi-process application (VB, VB Script, SQL Server) for the management of application events and data transmission

Business or sector Outsourcing and Infrastructure Delivery

EDUCATION AND TRAINING

September 2023 – July 2025

Executive MBA
University of Tor Vergata, Frascati

February 2021 — ITIL® 4 Specialist: Create Delivery and Support
E-quality Italia Srl, Rome

- improve existing processes
- effectively manage IT teams
- optimize value streams and workflows
- align digital services with business strategy
- improve how services are developed
- integrate new technologies embed Lean, Agile, and DevOps ways of working

August 2019 — ITIL® 4 Foundation
E-quality Italia Srl, Rome

- how modern IT and digital service organizations operate
- how value streams increase speed and efficiency
- how cultural or behavioural principles guide work that benefits the wider organization
- how to use commonly-used service management terms and concepts

July 2017 — ITIL® 3 Foundation Certificate in IT Service Management
Exxcon, Education, Munich

- Service Management in practice
- The ITIL® concept
- Philosophy of the Service Lifecycle
- Fundamentals, processes and activities of: Service Strategy, Service Design, Service Transition, Service Operations, Continuous Service Improvement
- Technology and architecture

November 1996 – July 2002 — Computer Science master degree

University of Milano, Computer Science Department, Italy

Thesis:

- 3D human faces reconstruction from two photographs

Other studies:

- Karhunen Loeve Transform (KLT), or principal components analysis
- Min vertex cover problem for non-oriented graphs
- Colouring problem of a graph
- Ada symbolic data flow analysis to detect deadlocks and other tasking anomalies
- Unix based network conference multitask program

Core subjects:

- Informatics, Mathematics, Physics, Statistics
- Optional subjects:
- Digital Signal Processing, Image Processing, Network Architecture and management

March 2012 – July 2012 — Certificate of proficiency

Universidad Politecnica de Madrid, Spain

Space Project Management Course

- Standards (ECSS)
- Project phases
- Space projects contracts
- Insurance contracts
- Configuration and control
- Risk management
- Project planning and control
- Integrated logistics
- ESA's Procurement Regulations
- Procurement phase
- The contract phase

February 2012 — Certificate of attendance

Fractal SLNE, Madrid, Spain

Satellite remote sensing

- Theoretical background
- Remote sensing system analysis
- Image processing
- Remote sensing applications

November 2011 **Certificate of attendance**

Fractal SLNE, Madrid, Spain

Scientific Imaging in the Visible and Near Infra-Red

- Solid state detectors
- Ideal detectors
- Scientific camera system

July 2007 **Certificate of attendance**

GMV Space And Defence S.A.

Orbital mechanics, spacecraft attitude dynamics

April 2007 **Certificate of proficiency**

SUN Microsystem Iberica S.A., Madrid, Spain

Object-Oriented Analysis and Design Using UML

- Software development process
- Object-oriented technology
- Object oriented methodology
- Project vision
- System requirements
- Use Cases
- Domain model
- Design model
- Architectural model
- Solution model
- System testing

PERSONAL SKILLS

Mother tongue(s): Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1
Spanish	C1	C1	C1	C1	C1
French	A1	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

Experience in international scientific and technical working environments
Experience in communicating with a wide variety of customers, business and technical colleagues
Good ability in establishing good relationships in multicultural environments

Organisational / managerial skills

Technical leader on all activities concerning the integration and testing of new facilities and the evolution of new ground segments.
As responsible for the development of the SMOS Level 3/4 production data centre I was responsible of a small team of software developer. During my experience as SMOS operator, I implemented with a colleague the Kamban methodology to organise the activities of the operational team.

Job-related skills

Particular interest in design study and project management
I can work alone and independently, if necessary with demonstrated problem solving capability, perseverance and ability to work under pressure

Computer skills

- 15 years of experience in C, C++ programming including the university career
- 5 years of experience in Python, SQL, PLSQL, Bash scripting and XML programming
- 2 years of experience in Windows software development
- 12 years of experience in Linux software development
- 3 years of experience in algorithm prototyping using MATLAB, Perl and Python
- 1 year of experience in Java programming
- VB, ADA, IDL, ASP programming for ad hoc problems
- 4 years of experience in implementing software products for Cloud and Clusters

Driving licence B

ADDITIONAL INFORMATION

Publications

- Astro MD User Guide 3.1, C.Gheller and E.Rossi (CINECA), U.Becciani, V.Antonuccio and D.Ferro (OACT), D.Biancu, H.De Ruiter and F.Tinarelli (IRA), L.Paioro (IFCTR), 2004 Cineca, Centro di calcolo Interuniversitario dell'Italia Nord-Orientale
- IAC-06-A4.1.8 THE ITALSEL/SETI-ITALIA NEW PROGRAMMABLE SPECTRUM ANALYSER, 2006

Personal Interests Interest on exploring diverse application field on Earth using Copernicus satellite data:

- Winner of 2nd prize Copernicus Hackathon 2018 in Darmstadt using Sentinel 5P data together with AI
- Winner of 1st prize Climathon 2018 in Darmstadt using Sentinel 2 data , using AI and block chain.

Director of Memberships of AISE the Italian Chapter of INCOSE (International Council on Systems Engineering)