Dear Sir/Madam,

I submit my application for the required position with enthusiasm, supported by hands-on experience in avionics systems and satellite telecommunications. I have an aptitude for the optimisation of network-administered autonomous solutions to minimise project costs, and I consistently aim to complete tasks with a balanced sense of urgency and attentiveness to achieve actionable results, keeping quality in mind with every challenge I undertake. I have previously applied my knowledge of flight dynamics, orbital mechanics and subsystems engineering to develop and validate applications with live telemetry, and I am eager to prove that the functional, technical and relationship-networking skills I have acquired during my career to date would be an asset to the organisation in question. Fueled by high energy levels and boundless enthusiasm, I'm easily inspired to follow my fascinations wherever they take me. As an expressive, multi-talented spirit with a natural ability to entertain and inspire, I'm never satisfied just thinking of new ideas. Instead, I have an impulsive need to act upon them. I'm a fast learner, able to pick up new skills and juggle different projects and roles with relative ease. I love remote-working for agencies, consulting for startups, and collaborating with talented mindsets to create digital products for both business and consumer use. My abundant energy fuels me in the pursuit of many interests, hobbies, areas of study and artistic endeavors.

The technical knowledge gained from my educational background in Spacecraft Systems and Design consistently motivates me to make proactive contributions and to take opportunities to understand any uncovered areas in depth. I am familiar with all phases of the systems engineering lifecycle, from requirements definition and validation to embedded software verification for Type Inspection Authority, and I am always excited about the opportunity to support an enterprise that strives to be at the forefront of enhanced technical services. I am driven by the opportunity to work in a diverse environment where the prime focus is achieving greater efficiency to deliver enhanced qualities of services across industries, and I am always eager to contribute towards the development and execution of automated testing procedures used throughout operations, and to contribute to the company's inspirational path of progression.

I have previously worked with SES Astra, where I led the development of autonomous applications for use within the O3b Fleet Spacecraft Operation Center. These experiences largely helped me understand the use of common network protocols for data exchange within spacecraft or ground networks, as well as the standards set by the European Cooperation for Space Standardisation. The tools aforementioned were developed in Python, however I also have experience using C and Unix OS, as well as CloudFormation to parse input JSON files for AWS stacks and infrastructure. I am also familiar with the trade-off between compression types for optimal image resolution, and the effects this can have upon system performance. I have working experience testing with network layers, from lab-based hardware analysis and system fault isolation (bit rate modifications, signal inversions etc.) to using industrial protocols to capture configuration-controlled formal test results. Within the Boeing 777X Systems Verification Team, I defined input requirement files to both modify system configurations and validate media sets to verify the transmission of all ARINC 429, ARINC 629 and CAN safety features within the 777X Remote Data Concentrator whilst adhering to strict technical deadlines. This has also given me exposure to the use of XML, Python and JSON APIs for remotely accessed Jenkins procedures, as well as Resource Database development and configuration. Following an Agile software development process throughout, I gained valuable insight into negotiating common grounds amongst evolving applications and coordinating shared responses to achieve rapid implementation for desired objectives.

As a self-taught full stack engineer with a serious passion for robust systems development, I have started building applications with common web frameworks such as ReactJS and NextJS and have since participated in the migration from PHP to TypeScript for Brandwatch.com - a social media analytics tool tracking billions of conversations happening online every day. As well as working with agencies and startups such as Code & Wander and Nocodelytics, I have started my own systems development consultancy and I am continuously building out my own projects through to completion and successful commercialisation.

My ability to listen, to discuss, and to present technical data across projects has been illustrated by the experiences described above. Together with my pragmatism, technical knowledge, team motivational skills and participative work-ethic, I believe I possess the transferable skills that could be applied to any task I undertake and, therefore, feel confident that I can become a valued member of the Inmarsat team. For more details of my competencies and background, please review my resumé and feel free to contact me at your earliest convenience. Thank you in advance for your consideration and I look forward to hearing from you.

Yours faithfully,
Alessandro Arnò

Alessandro Arnò

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Personal Profile

I am an aspiring Systems Engineer with work experience in avionics systems and satellite telecommunications. My Masters in Spacecraft Engineering has helped me gain a huge appreciation for understanding a system from first principles and investigating alternative solutions, and I consistently aim to keep quality in mind with any challenge I seek. My desire to work as a Propulsion Systems Engineer continuously inspires me to pursue a career in the space industry. As a long-standing Swim Team Committee Member, my time at Southampton demanded impeccable organisation, excellent people skills and coaching, and the ability to cooperate with various parties to achieve strategic objectives.

Experience & Accreditations

Full Stack Engineer

DevArno, Code & Wander, Nocodelytics 2021 | Present

- Full stack migration from PHP to TypeScript for Brandwatch.com, a social media analytics analytics tool tracking billions of conversations happening online every day.
- Front end consultant for a Webflow analytics tool providing valuable insights that help SME's grow rapidly.
- Started my own systems development consultancy, continuously improving ongoing projects through to successful commercialization for both business and consumer use.

Avionics Systems Engineer

General Electric Aviation Systems (Bishops Cleeve, Cheltenham) 2018 | 2020

Nominated for the GE Global 'Horizon Award' for upholding best systems engineering practices

- Defined input requirement files to modify lab-based test system configurations and to verify the transmission of all safety features within the 777X Remote Data Concentrator.
- Implemented an engineering analytics dashboard to deliver metrics to Boeing and to track technical debt.
- Developed a GUI to progress the verification of the Propeller Electronic Controller, gaining valuable insight into requirements traceability and test case definition.
- Led a team of interns in the conceptual design and progression of a Micro Interface Unit.

Supervisors: *Daryl Dixon, Technical Manager & Gary Sheppard, Head of GE Aviation Systems Engineering.*

MEng Aeronautics and Astronautics with Spacecraft Engineering

University of Southampton 2014 | 2018

Accredited by the Institute of Mechanical Engineers and the Royal Aeronautical Society

Primary focus on Spacecraft Systems, Propulsion, Structures and Orbital Mechanics, with further modules in Avionics, Advanced Computational Methods and Engineering Accounting and Finance.

Supervisor: *Prof. John S. Shrimpton BEng, PhD, DSc, CEng, FIMechE.*

Project Systems Engineer

MEng Thesis Group Design Project (University of Southampton) 2017 | 2018

Shortlisted for the Design Excellence Award at the Faculty Engineering Design Show 2018

Based on the design of a neutraliser for a GI Thruster using electron cyclotron resonance for plasma production;

- Modelled the chamber flow conditions to design an orifice plate capable of both an adequate plasma density and a sufficient field visibility during operation.
- Designed the propellant delivery system to achieve a specific chamber pressure requirement.

Supervisor: *Dr. Angelo N. Grubisic BEng, MSc, PhD.*

Thermal/Power Subsystem Engineering Intern

O3b Operations, SES Astra (Betzdorf, Luxembourg) 07/2017

Developed a tool to fetch updated telemetry from the company's database, and correlate an empirical thermal model based on satellite temperature, EPC power and solar inclination angle.

Supervisors: *Giulia Spinato & Marco Pacitto, O3b Operations Senior Manager (reference available).*

Professional competency and character references are available upon request.

Flight Dynamics Software Engineering Intern

O3b Operations, SES Astra (Betzdorf, Luxembourg) 08/2016

Developed a tool to determine the visibility between an O3b satellite within a constellation of SP3 satellites during any instance within the history of O3b Fleet telemetry.

Supervisors: *Marco Pacitto & Michael Croon (reference available).*

Head of Performance Optimisation

Design and Computing Group Project (University of Southampton) 2015 | 2016

Based on the design of the Arduino-based flight computer, wings and optimised high-lift devices for a UAV, where I designed a pair of blended winglets using CAD and CFD, and implemented them using 3D printer technology, diminishing Induced drag by nearly 10% as a result.

Supervisor: *Dr. David Toal MEng, PhD, AMRAeS, MAIAA.*

Merit Scholarship Award

Engineering Foundation Year (University of Southampton) 2013 | 2014

Based on academic results (£1000).

Skills (please see devarno.com for more details)

- Practised in a range of Systems disciplines across various Aerospace organisations, with working experience in spacecraft subsystem engineering and applicable knowledge of ground segment systems.
- Competent in sharing technical knowledge across projects to enhance development processes.
- Practical understanding of Systems Engineering processes and working with configuration control on development baselines.
- Passion for the execution of automated solutions to de-risk development and to minimise costs and delays.
- Effective in clarifying specifications and planning technical proposals to meet project deadlines.
- Highly proficient in developing and optimising computational cores of object-oriented applications, and administering these solutions to systems and networks.
- Proficient working understanding of the V-lifecycle, Requirements Management, and MBSE.
- Experience within configuration-managed projects, tracking progress to identify systems enhancements.
- Enthusiastic about driving creative problem solving and motivating teams for efficient project management.
- Working understanding of Aviation/Space industry design processes, driven by a passion for electric and chemical propulsion systems.
- Fluent in English, French and Italian (working knowledge of Spanish).
- Competitive swimmer, Events Officer and Vice President of Southampton University Swimming Club.

Software (please see devarno.com for more details)

- Web frameworks (ReactJS, NextJS, VueJS, NodeJS) and libraries (MaterialUI, Framer, ChakraUI, Bootstrap)
- Relational / NoSQL database management systems (MongoDB, CockroachDB, Prisma, PostgresQL, GraphQL)
- MATLAB (Simulink, AppDesigner, Test Manager) and Modelica (component-oriented systems)
- Python, R Studio, Spyder, Jupyter, Anaconda (plotting, parameter sweeps, API and database management)
- C, C++, bash scripts and Arduino (automation and robotics)
- Solidworks, COMSOL and ANSYS (computer aided design, and finite element / thermal component analysis)
- DOORS, Rational Team Concert and Serena Dimensions (configuration and lifecycle management).

Professional competency and character references are available upon request.