

Sam Belliel

Portfolio: <http://www.sambelliel.com> | sbelliel@gmail.com | www.linkedin.com/in/sambelliel | US Citizen, Seattle, WA

Objective

Systems engineer building scalable climate and space infrastructure across aerospace and energy systems.

Education

Universidad de los Andes – Bogotá, Colombia #1 in Colombia, #14 in LATAM - US News and World Report 2025
Master in Regeneration and Sustainable Development

Aug 2024 – Present

Purdue University – West Lafayette, Indiana #2 in USA for Mech. Eng. - US News and World Report 2025
Bachelor of Science in Mechanical Engineering | Minor: Astronomy

Aug 2013 – Aug 2017

Certifications: Associate Systems Engineering Professional (ASEP) | Engineering in Training (EIT)

Experience

Independent Climate & Energy Systems Engineer | Master's Candidate – Latin America
[Green Hydrogen Capstone Project](#)

Jan 2024 – Present

- Architected and modeled a modular green hydrogen production system, integrating systems engineering, fluid design, renewable energy modeling, and circular economy principles.
- Applied MBSE methodologies to define system architecture, interfaces, and performance requirements.
- Conducted techno-economic and feasibility analyses (CAPEX/OPEX, reliability, energy yield) to evaluate commercial viability and infrastructure scaling.

[Program and Applied Sustainability Work](#)

- Developed financial and feasibility analyses demonstrating the corporate value of sustainable initiatives.
- Conducted independent research applying sustainability principles to aerospace, alternative fuels, and energy systems.
- Integrated sustainability, lifecycle, and socio-ecosystem considerations into systems engineering and decision frameworks.

Blue Origin – Kent, WA – Aerospace Systems Engineer III

May 2020 – Dec 2023

- Managed system, subsystem, and component-level fluid system requirements for the New Glenn umbilical subsystem, collaborating with interfacing systems and driving overall design and compliance to launch-critical requirements
- Led operations planning and development for the umbilical components from manufacture to retirement
- Developed computational models with varying degrees of complexity in MATLAB and Excel

Fluid Systems Engineer II

- Led system safety analyses (FMECAs, FHAs, FTAs) for New Glenn umbilical subsystems supporting cryogenic propellant transfer and vehicle integration
- Developed reliability models in conjunction with FTAs to model the system predicted functionality
- Created a MATLAB program to perform dynamic system analysis, including GUIs and data visualization

Fluid Systems Engineer I

- Supported component design and supplier management of an umbilical latch design
- Created and pursued engineering change requests to communicate changes effectively
- Utilized CAD skillset to propose design alternatives and support trade studies

Systima Technologies – Kirkland, WA – Aerospace Mechanical Design Engineer

Dec 2018 – May 2020

- Progressed from test fixture design to full system technical lead, owning system-level design, analysis, integration, and customer facing engineering reviews.
- Designed and developed pyrotechnic devices and assemblies for military applications, leading iterative design cycles from concept through qualification and manufacturing using SolidWorks and detailed engineering analysis.

Skills

Technical Tools:

MATLAB, Arcadia MBSE, DOORs Next Gen, SolidWorks, FMECAs, FTAs, CAD PLM

Languages: English (Native), Spanish (C1)

Systems and Analytical

Systems Engineering, Fluid Dynamics, Thermodynamics, Concept & Design Creation, Statistics, Renewable Energy, Finance

Sustainability and Strategy

Strategy Development & Implementation, Sustainability Integration, Circular Economy, Ecosystem Services, Human Behavior