Computational Flow Dynamics – CFD Internship

Offer

Contract Type: Internship (6 months)

Location: Paris suburbs – Massy (91)

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Contact: contact@spacedreams.com

About SpaceDreamS

Founded in 2021 and based in Paris and Toulouse, SpaceDreamS are spaceport architects. The company's mission is to enhance the competitiveness of launch systems by developing interoperable and modular launch pads. SpaceDreamS provides turnkey ground solutions for launch vehicles and spaceports, aiming to reduce the cost and time to access space.

A multiple laureate of the France 2030 program, SpaceDreamS is supported by the DGA, CNES, and ESA to foster the growth of its clients in France and Europe.

We are developing NuPad (Next-generation Universal Pad), the first interoperable launch pad adaptable to any type of launch vehicle, at various lifecycle stages, and capable of being transported between certified launch sites.

The TwinPad is the digital twin of the ground launch system. It facilitates the development of launcher and launch pad operational software, as well as virtual and real-time simulation of cryogenic, electrical, and mechanical fluid processes.

SpaceDreamS is also conducting preliminary studies on the development of ground support systems for several mini and micro launchers.

Role

As a Fluid Engineering Intern, you will play a key role in structuring and supporting our multiphysics simulation department in developing CFD methods for fluid system design.

Working closely with the engineering and project teams, you will be responsible for:

- Developing the methodology around CFD modelling for the different use cases available in the company (CAD model adaptation, mesh definition, turbulence model use, etc...),
- Dealing with physic phenomena such as:

    - Thermal stratification in a cryogenic tank,
    - Acoustic loads reduction due to water deluge system operation on a launchpad,
    - Rocket engine ground ignition system,
- Assisting the 0D/1D fluid analysis with more detailed simulation resources to capture more complex phenomenology,
- Coupling 0D/1D fluid system modelling with 3D CFD simulation,
- Reinforcing our scientific literature database to improve system design and modelling capacities,
- Participating in internal reviews of design and writing associated technical documentation.

This role will expose you to the **complete engineering design cycle**, from concept definition through **preliminary design**, to **system validation** with simulations and tests. You will be part of a growing team developing **ground systems for next-generation space launch vehicles**.

Profile

Qualifications

- Currently enrolled in a Master's program / Engineering School in **Aerospace Engineering, Fluid Dynamics or Energy & Propulsion**,
- Basic understanding of **fluid mechanics** and **thermodynamics**,
- Good **analytical** and **organizational skills**, as well as a great **adaptability**,
- Ability to work effectively in a **multidisciplinary team**,
- **Technical writing skills in English** (presentation, reports, or project documentation),
- Motivation for learning / practicing new **software** and **tools**.

Preferred Qualifications

- Experience in **CAD design** and / or **CFD** is strongly recommended,
- Familiarity with **cryogenic fluids** and / or space **fluid system design** is a plus,
- Interest in **space exploration** and staying up to date on space-related news,

- Experience in **student technical projects** (collegiate rocketry, Formula Student, CubeSat teams, etc...).

We offer

The opportunity to be part of a unique human and technical adventure within a diverse and experienced team.

- A chance to **build the digital twin** of real space ground infrastructure,
- Direct exposure to **systems designed in the industry** and especially for clients from the new space,
- The opportunity to **shape the design process** of ground fluid systems by contributing to structure CFD methodology,
- Daily collaboration with a passionate team of engineers working on **fluid, control, and mechanical systems**, as well as **launch operations**,
- A **structured mentorship** environment with room for technical growth, autonomy, and meaningful contribution,
- A culture that values clarity, curiosity, and **engineering as a team sport**.

Internship Conditions

- **Duration**: 6 months
- **Start Date**: Flexible start between Jan – March 2026
- **Location**: Massy, France – Our offices are 20mins away from Paris by public transport
- **Compensation**: 1200€ gross

Interested?

Send your CV and cover letter to contact@spacedreams.com