INTERNSHIP OFFER

Ref : SE-STG-2019-20-MBSE_Web_Architecture

TITLE: Software designer/developper for Web Architecture

Duration and period

6 Months

A few words about Samares Engineering

Samares-Engineering is a recognized **expert in the field of systems engineering** and more specifically in **Model-Based Systems Engineering (MBSE)**. Samares-Engineering provides consultancy for design offices of large companies in different domains: Airbus, Safran, Renault, Schneider Electric, Continental Automotive, Latécoère, Rockwell Collins…

Samares Engineering also does research and provides training courses. It has strong relationships with high schools and research institutes in Toulouse: ISAE Supaero, Enseeiht, CNAM, IRT St-Exupery.

Internship context

Samares-Engineering is currently deploying an MBSE (Model-Based Systems Engineering) methodology that enables system engineers to define their system/product through use of modelling approach. Models concern all development activities from capture of system context to internal architecture, and to detailed design and verification on virtual product.

Technically, this methodology is based on the use of tools that work on a client-server approach and most of the model edition and transformations are performed on the systems engineer computer (client side).

Samares Engineering would like to investigate on ability to perform some model edition (create/update diagrams and tables) and some model transformations (checks, doc generation…) on server side.

Goal and tasks of internship

Goal: the main goal of this internship is to suggest approach, architecture and technologies in order to move some automated tasks from “client” side to “web server” side with “good performance” .

Tasks

1. Refine the needs through some case study provided by Samares Engineering. Samares Engineering will provide a model and some modelling tasks currently performed on client side. Task 1 will consist in suggesting one or several approaches to perform part or those tasks on web server side.
2. Identify different possible architectures and technologies able to support approaches defined in Task 1. Definition of criteria to assess the technologies.
3. Assess the different technologies on the sample model provided by Samares Engineering and with regards to the criteria defined in T2. Comparison of the technologies and presentation of the comparison to Samares Engineering.
4. Develop one or several prototypes (Proof Of Concept) with architectures and technologies selected in task 3: API, server deployment and development, …)
5. Complete PoC with large volume to assess performance and check that architecture and technologies scale.

We are offering you a challenging mission with a flexible environment. This is a great opportunity to develop an experience in software architecture. You will be in charge to investigate on web-oriented architectures and web technologies and you will have some flexibility and autonomy to design and implement proof of concepts.

Working environment

Samares Engineering is part of Ethics Biotope, an eco-system with different companies and partners involved in building a new vision called "good company". Collaboration is encouraged and there are many facilities to support companies in their development. It is located in Ethics village at 8 minutes from the Airport and tramway.

Concerning technical environment, you will access to Samares Lab' that contains servers for DevOps software development and High-Performance Computing means.

Intern expected profile

Diploma/study:

- College student working toward to a Master or an Engineering degree in computer science

Required skills:

- Programming languages: mostly Java, but also Python
- Server: NodeJS, Python, Apache,
- Tools: Git, Intellij

Note: Knowledge in modelling languages like UML or SysML is a plus.

Expected behavior qualities:

- **Creative**: you will investigate on several solutions that do not exist today. Thus, we are open to all suggestions that comply with the needs captured and refined in task 1. This is a unique opportunity to look at innovative approaches and technologies.
- **Agility**: Knowledge in agility concept is a plus (Scrum, XP)
- **Analytical**: problem solving and time management skills
- **Good relationship:** there will be strong interactions with Samares Engineering R&D team

Location

BLAGNAC- 2, Avenue de l'Escadrille Normandie Niemen, Ethics Biotope.

Internship compensation

900 € / month net value.

Application for this offer

Preferred way is to apply directly from our web site: *http://www.samares-engineering.com/fr/contact-2/*
You can also apply to this offer by email to: contact@samares-engineering.com