Simulation and models researcher
Chercheur modélisation et simulation numérique

VERI (Who we are)

Veolia Research and Innovation (VERI) is Veolia corporate research entity with projects in the water, waste and energy domains. Thinking that smart ideas can have their part in climate change mitigation and resource preservation for this planet, we provide innovative solutions to these key challenges.

At VERI, the Modelling & Information Technologies Department is a nodal centre when it comes to renewing our business with smart and digital initiatives. Acting as a catalyst in constant connection with our business units, the department put its mission on the fast delivery of high value and user-oriented services. Scope of actions ranges from bringing performance jumps to our core processes for water or waste treatment, enabling operation excellence by better planning or decisions, fostering new digital services to extend our traditional activities and business models.

The context (What you will contribute to)

As a modelling and simulation researcher in the System Modelling and Fluid Mechanics lab, you will find your space along neighbouring data scientists, systems architects or software developers from across the department and you will join projects teams to design some outdoor air quality application for smart cities, run simulations to optimise new plants for better recycling of valuable materials or develop a prototype based on complex systems to assess Veolia next strategic moves on circular economy.

The Job (What you will do)

As part of your missions as a modeller, you:
- Imagine and design new models with business experts from VERI and partners from all around the world for solving various problems and rapidly develop prototypes for early testing of new services or applications
- Benchmark existing expert tools, modelling platform, simulators for project needs not yet properly covered by our internal toolbox
- Write model specifications to match both business expectations and IT requirements and assist the industrialization process that will bring innovations to the real world
- Oversee workpackage developed by partners in internal or collaborative projects
- Set up, instantiate and run simulations cases, analyse results with the project team, write studies report, present findings to various audience (intern and extern)
- Develop new modelling and simulation workflows to increase productivity and use of simulations (data pre and post processing, sensitivity analysis, parameter estimation, optimisation, etc.)
Depending on taste, ability and experience, you will progressively:
- Develop an area of expertise on systems modelling and analysis and become internal referee on related topics, ensuring an active survey of innovations and new practices
- Empower other VERI specialists to use simulation tools more broadly via technical support, teaching or development of user-friendly tools
- Manage the High Performance Computing (HPC) services delivered to teams in VERI and internal business units, and support the transition to cloud-based solutions
- Help to define and set up the modelling roadmap for Veolia and VERI needs on a given domain (competency, tools, knowledge)

**Expected Profile (Who we are looking for)**

We hire people who are smart and determined, and we favor ability over experience

**Competencies**
You are a young professional with strong appetite for numerical simulation and model development, happy with data analysis and workflow automation. You have demonstrated capability to be efficient in some programming or scripting languages and your mind-set clearly pushes you to become fully autonomous and constantly develop new skills and programming paradigm. Previous experience in relevant field such as computational science, operational research or modelling and simulation applied to environmental sciences, energy, process engineering, chemistry is expected.

You have a clear and efficient communication style, orally as well as written. Fluency in English is required (writing technical reports and participation in technical or business meetings in an international context).

**Attitude**
You have fun thinking the world in concepts and using equations and simulations to test ideas and solve concrete problems. You are curious and willing to learn when it comes to discovering new methods or new application fields. You are not shy to try and attempt to find the right balance between scientific rigor and genuine exploration. Your entrepreneurial spirit could drive you to innovate in areas outside the job spec. You are flexible and pragmatic enough to adapt to market needs and projects evolutions. Your open mind will make it easy for you to integrate smoothly and contribute efficiently to multidisciplinary project teams. You are self-driven and team player as you think that great ideas comes where personal intuition meets group emulation.

Does it sound familiar to you?
These are very good news: we are looking for someone like you.

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