

Modelling & Simulation Engineer

Reference: ADS-MSE-0924

About the Company:

At **adsilico**, we're not just building models, we're shaping the future of healthcare. We're on a mission to redefine medical device innovation, powered by cutting edge *in silico* technologies that get *better* devices to patients *faster* and *cheaper* than ever before. We're pioneering techniques for generating virtual patients with unparalleled fidelity and diversity, and for deploying these in groundbreaking *in silico* trials. We are passionate for technology that impacts lives.

Want to do work with purpose? At **adsilico**, you will create technology that accelerates the creation of new medical devices, enables radical innovation with direct benefits to patients, yet lowers the cost. You will help to eliminate the use of animals in medical device testing yet reduce the patient harms that stem from undertesting of new products. You will advance the state-of-the-art yet keep patient impact squarely in sight.

Our team is diverse and proud of it; we know we are stronger for it. We are supportive and inclusive. We value excellence and ethics in equal measure.

We're backed by a motivated and experienced investor consortium, a world-class advisory board of experienced MedTech entrepreneurs, scientists, and regulatory specialists, and competitive funding from Innovate UK.

About the Job:

As a **modelling & simulation engineer** at **adsilico**, and a core member of our simulations team, you will be at the forefront of our efforts to create scalable simulation technologies that leverage our cutting-edge virtual patients. You will design and implement techniques for simulating medical device interventions on populations of virtual patients, from developing and validating underlying model components to deploying these in automated and efficient workflows. You will focus in the first instance on devices for cardiovascular diseases. You will have a passion for impacting healthcare through commercial translation of state-of-the-art developments in modelling & simulation, and the technical skills to match.

Responsibilities:

- Develop efficient and reliable models of the behaviour of cardiovascular medical devices and of relevant patient tissues and fluids.
- Design and execute rigorous verification and validation strategies for these models according to relevant standards and regulatory guidance.
- Develop automated computational workflows for creating and executing large-scale simulation studies for predicting device performance on populations of virtual patients.
- Design and implement tools for analysing and reporting on simulation results.
- Contribute to development of formalised standards of practice for modelling & simulation within the company which reflect relevant industry standards and regulatory requirements.
- Keep abreast of the latest advances in modelling & simulation, and ensure our methodologies reflect the state-of-the-art.
- Where relevant, contribute to design of quality management processes for developed software with input from other members of technical and R&D teams, conforming with ISO 13485 and ISO 27001.

- Collaborate with the regulatory affairs team to ensure simulations meet regulatory requirements.
- Implement good documentation practices based on quality management processes.
- Consult and collaborate with cross-functional technical, data, and R&D teams to ensure harmonised development of algorithms and technology infrastructure across the organisation.
- Contribute to scientific publications and conference presentations that establish **adsilico's** thought leadership.
- Communicate technical concepts to both expert and non-expert internal and external stakeholders.

Minimum qualifications:

- Ph.D. in a relevant field (engineering, computing, mathematics, physics, etc.).
- Or:
- Master-level degree or equivalent in a relevant field *and* 4 years' industry experience of directly related modelling & simulation.

Minimum experience:

- Proven experience of computational modelling & simulation with a focus on medical devices, preferably in an industry setting.
- Solid understanding of theoretical principles underpinning nonlinear finite element analysis (FEA) and proficiency in the use of at least one major FEA software package (Ansys/LS-Dyna preferred).
- Proficiency in Python programming and in creation of efficient and well-documented scripts for model creation and execution.
- Familiarity with the ASME V&V40 standard for assessing model credibility in medical device simulation, and with related FDA guidance.
- Experience of following best practices for software development (e.g. use of Git for code version control).
- Experience of communicating research to expert and non-expert audiences.

Highly valued:

- Experience of working in the medical devices or other similarly regulated industry.
- Experience of image-based approaches to patient-specific modelling, and familiarity with common libraries and packages for the same.
- Experience of patient-specific cardiovascular modelling, and commensurate understanding of relevant anatomy and physiology.
- Experience of implementing ASME V&V40, especially in an industry setting.
- Knowledge of medical device regulatory processes (FDA, EU MDR etc.).
- Experience of working in quality-controlled environments.
- Experience of containerisation of computational tools and use of these in scripted workflows.
- Experience of using Simulation Process & Data Management tools.

Why Join Us?

- **Impact:** Contribute to groundbreaking advances in *in silico* trials that will reshape the medical devices industry and bring innovations to patients faster and more safely than ever before.
- **Entrepreneurial Environment:** Be part of a cutting-edge start-up that values creativity, collaboration, and agility; make your mark.

- **Research-Driven Innovation:** Work with a world-class scientific team to shape products and services based on cutting-edge research.
- **Upskilling:** Get exposure to and training in highly valued areas, such as quality management and regulatory affairs to accelerate your career in a fast-growing field.
- **Location:** Take advantage of our modern and well positioned office in Leeds, UK, balanced with hybrid working opportunities.
- **Compensation:** Receive a highly competitive package.

If you are interested in joining the team, get in touch! Please send your CV and cover letter to: jobs@adsilico.uk. In your cover letter briefly describe how your experience, knowledge and skills meet the job requirements.