Software development Engineer in Graphical user Interface and Digital Twin Software Platform simulating lower limbs under elastic compression – 18-month fixed-term contract Centre CIS – Mines Saint-Etienne

JOB ENVIRONMENT:

Institut Mines-Télécom is the leading public group of engineering and management *Grandes Écoles* in France. Consisting of eight public graduate *Grandes Écoles* and two subsidiary graduate schools, *Institut Mines-Télécom* leads and develops a rich ecosystem of partner schools, economic, academic and institutional partners, key players in education, research and economic development.

Mines Saint-Étienne, a graduate school of the *Institut Mines-Télécom*, is responsible for education, research, innovation, industrial transfer and scientific culture dissemination. With 2,500 students, 500 staff and a budget of €50m, it has 3 campuses dedicated to the industry of the future, health and well-being, and digital sovereignty and microelectronics. It is ranked in the top 10 graduate engineering schools in France and the top 500 universities worldwide.

The 2023-2027 strategy of Mines Saint-Etienne is in line with that of *Institut Mines Telecom*. It aims to:

- Support the ecological, digital and generational transitions and educate the people involved
- Support national and European sovereignty in microelectronics and digital technology

To support this strategy, it is recruiting a software development engineer.

JOB DESCRIPTION:

The position to be filled is that of software development engineer based at Centre Ingénierie Santé (CIS).

The CIS brings together 70 people, including 18 professors in engineering industrial/computing, biomechanics and healthcare engineering. Since its creation in 2004, the CIS has been representative of the ability of Mines Saint-Etienne to acquire leadership on innovative themes such as, for example, soft tissue biomechanics. SAINBIOSE (INSERM UMR 1059) brings together researchers from the CIS (biomechanics, biomaterials and bioengineering), the faculty of Medicine from Jean Monnet University, Saint-Etienne University Hospital, Inserm and the French Blood Establishment. The global scientific objective of SAINBIOSE is a better understanding and of biostress in osteoarticular (LBTO team) and cardiovascular pathologie (DVH team).

Website: https://sainbiose.univ-st-etienne.fr/

Biomechanics, experimental and computational, is a major research topic of SAINBIOSE, which goes from modelling the mechanical behaviour of tissues to clinical and industrial applications, especially with the textile industry.

We are planning to open a non-permanent position of software development engineer to join a team elaborating a digital twin of the venous and lymphatic networks of the lower limb.

Job duties and activities: as a software developer, your job will involve:

- Collaborate with researchers conducting basic research in biomechanics and biomedical engineering, within the framework of a laboratory environment, and in collaboration with a company leader on the compression stocking market.
- The work will be carried out at Mines Saint-Etienne, within the SAINBIOSE research unit (Inserm U1059). It is based at the Centre Ingénierie et Santé (Hospital campus at the North of Saint-Etienne). There will be collaboration with and regular visits to the compression stocking manufacturer and to other laboratories in France participating to the project.

- The objective of the project is to develop a software to assist product design for compression stockings. A team is already at work for developing and combining a digital twin of the lower limb and on models of compression textiles predicting the hyperpressures induced by elastic compression in the deep soft tissues. We are seeking to hire a software developer to complete the team and integrate all the developments in a platform with a graphical user interface developed in Python. Eventually, the software will be tested and validated by engineers of the stocking company.

The project will take place in a research group having 15 years experience in developing software for biomechanical applications (https://emse.fr/~avril/).

PROFIL:

Diploma required: master's degree in the field of solid mechanics, fluid mechanics or biomechanics.

Essential skills, knowledge and experience:

- Capacity to successfully integrate a team and a group within a R&D environment
- Coding skills in Python/Julia/C# language
- First successful programming experience
- Expertise in front-end and back-end development

WHY JOIN US:

Institut Mines-Telecom is characterised by:

https://www.youtube.com/watch?v=m39m6hdNC48

- A scientific environment of excellence,
- A group with entities throughout France.

Mines Saint-Etienne is distinguished by:

- A privileged working environment with a high student supervision rate and a high environment rate (support and back-up functions)
- First-rate experimental and digital resources
- Significant contract research activity (€11m/year in Research and Innovation contracts), mainly with industrial partners
- 25% international students, Member of the T.I.M.E. network and the EULIST European University
- A centre for scientific, technical and industrial culture - *La Rotonde* - which is unique in France, and which has a major impact on society (> 50,000 visitors per year)
- Pleasant workplace, easily accessible by public transport and close to motorways
- Public transport costs reimbursed up to 75% (subject to conditions)
- Sustainable mobility package
- Staff committee that subsidises sports, leisure, cultural and social events and activities
- The possibility of partial remote working
- 49 days annual leave

ADDITIONAL INFORMATION:

Recruitment conditions:

- Fixed-term contract for a period of 18 months
- Desired start date: 1st July 2024
- Remuneration will be set according to the candidate's profile, based on the rules defined by the *Institut Mines Télécom's* management framework
- Full time

- Position based in Saint-Étienne
- Category II - Job R - Engineer according to the Management Framework.

The position is open to all, with accommodation available on request for candidates with disabilities.
The job is open to civil servants and/or the general public.

How to apply:

Applications (CV, covering letter, letter of recommendation if applicable) must be submitted on the RECRUITEE platform **no later than 30 April 2024**:

https://institutminestelecom.recruitee.com/o/software-developer-in-graphical-user-interface-and-digital-twin-software-platform-simulating-lower-limbs-under-elastic-compression-18-month-fixed-term-contract-centre-cis-mines-saint-etienne-2

As part of its Equality, Diversity and Inclusion policy, École des Mines de Saint Etienne is an employer that is committed to fair treatment of all applicants.

Successful candidates will be interviewed on May 2th and/or May 3th, 2024.

For further information:

- For further information about the position, please contact:

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- For all administrative information, please contact:

Charlotte Mogier– HR Administrator
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Useful links:

https://www.mines-stetienne.fr/

https://www.imt.fr/

https://www.youtube.com/watch?v=QUeuC5iQiN0

Protecting your data:
https://www.mines-stetienne.fr/wp-content/uploads/2018/12/Informations-des-candidats-sur-les-traitements-de-donn%C3%A9es-personnelles.pdf