Université de Strasbourg

Engineer in development and applications deployment

1. Identification of the position

Status :   **Study engineer**

Category : BAP E   **Engineer in development and applications deployment**

UFR, Direction, Service : INSERM U1114 'Neuropsychologie Cognitive et Physiopathologie de la Schizophrénie'

Contact(s) for job information (identity, position, mail, phone) :

Anne Giersch ; Director of the laboratory, DR2 INSERM, giersch@unistra.fr, 0388116471

Situation of the position in the lab : NA The unit is mono-thematic

2. Mission

The Engineer will be in charge of realizing, implementing and ensuring the corrective and evolutionary maintenance of software developments by defining the hardware and software means in cooperation with the project manager.

3. Activities

➢ **Main activities :**
  - Define the hardware and software architecture by taking into account the experimental constraints.
  - Evaluate the workload and costs of a software development.
  - Carry out all or part of a software development by creating man-machine interfaces.
  - Assemble software components. Integrate and parameterize the software packages.
  - Define the technical clauses of a specification.
  - Write the documentation (developer, user and operation). Save and manage high volume data (functional imaging, eye movements, movement trajectories, electrophysiology and EEG, voltametry).
  - Analyze the results: MATLAB programming adapted to the questions asked during the experiment (High Performance Computing, advanced algorithms, or analysis software modeling).

➢ **Related activities :**
  - Elaborate the test sets, integration and load resistance
  - Write the application's help booklet

- Ensure the deployment of the application (installation, assistance, training, evaluation)
- Maintain the application (diagnose defects, correct them), and make it evolve
- Ensure technological monitoring watch
- Store and analyze data
- Teach the basics of programming to students
- Provide technical assistance to researchers. Provide assistance and advice to users of EEG and fMRI data analysis software.
- Introduce master 2 and thesis students to programming in e-prime, R and matlab.

4. Competencies

➢ **Expertise** :

Extensive knowledge of a specification and design method
Extensive knowledge of distributed application programming techniques and object programming
General knowledge of Windows operating system
Basic knowledge of human cognition
Basic knowledge of project management methods
English: written and oral expression: level 1; written and oral comprehension: level 2

➢ **Operational skills :**

Master a design and analysis method
Master methods and techniques of programmation
Analyze and formalize the processes of the application domain in relation with the users
Assimilate the logic diagram of a software package, integrate it into one's development practice
Analyze user needs and translate them into technical specifications
Use a modeling tool
Structure and write a technical document adapted to the different users (their use and language)
Ensure compliance with quality provisions and programming standards
Plan the activities
Monitor the progress of the work within the team
Transmit some knowledge and adapt explanations to the public concerned
Take into account the observations and questions of the users

➢ **Behavioral skills :**

Ability to adapt to new methods, techniques, or programming languages.
Pedagogy and communication skills.
Autonomy, sense of responsibility and initiative
Ability to listen.
Discernment, discretion

5. Environnement and working context

> **Service description:**

We explore the pathophysiology of schizophrenia by studying the mechanisms of cognitive disorders in patients and by reproducing them in rats. To this end, we create tests that consist in exposing human subjects or rats to information or stimuli, and measuring their effects on different variables (behavior, eye movements, electrophysiological or neurochemical signals, or functional imaging), according to the rules of experimental psychology and psychophysics.

3 ITA are presently in the lab, for 15 permanent staff members (5 researchers EPST, 1 MCU, 6 PUPH, 1 MCUPH 2 PH). 1 ITA INSERM works in the fields of animal research and 1 ITA INSERM and 1 ITA from university are involved in the achievement and administration of experiments conducted in humans.

> **Hierarchical relations :** The engineer will work with all the researchers of the Unit

Specific constraints: The study of cognitive disorders is based on experimental psychology and psychophysics methods, and we are the only INSERM unit to develop applications to study these disorders in humans and animals in Strasbourg. The effective development of applications can only be done through a long-term dialogue with researchers, which permits to meet their needs.

To apply, please send your CV and cover letter by September 1 to :

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