**UNIVERSITY OF SURREY**

| Post Details | |
|---|---|
| **Faculty/Administrative/Service Department** | Faculty of Health and Medical Sciences |
| **Job Title** | Research Software Engineer in AI chatbot development |
| **Job Family** | Technical and Experimental | **Job Level** | 4 |
| **Responsible to** | Project Principal Investigator |
| **Responsible for (Staff)** | |

## Job Purpose Statement

A full-time Research Software Engineer in AI chatbot development. This is an excellent opportunity for an R&D engineer to further develop their software skills within the area of data management, data analysis, AI model training and inference, semantic enrichment and interoperability of datasets and metadata.

The role will be based in the Department of Microbial Sciences within the School of Biosciences at the University of Surrey, and we offer the opportunity for hybrid working – some time on campus and some from home. We welcome applicants who wish to pursue the role through flexible working patterns.

## Key Responsibilities This document is not designed to be a list of all tasks undertaken but an outline record of the main responsibilities.

1. Research and develop software modules for data management and analysis, AI model training and inference, and semantic enrichment and interoperability of datasets and metadata.
2. Contribute to deliverables and milestones relating to the technical design and development of the project's architecture and modules.
3. Contributing to iterative deliverables for the projects such as technical reports, software integrations and source code releases, which need to be ready at their prescribed deadlines throughout the project lifetime.
4. Active liaising with collaborators in the project,

**N.B. The above list is not exhaustive.**

**All staff are expected to:**

- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities Policy.
- Work to achieve the aims of our Environmental Policy and promote awareness to colleagues and students.
- Follow University/departmental policies and working practices in ensuring that no breaches of information security result from their actions.
- Ensure they are aware of and abide by all relevant University Regulations and Policies relevant to the role.
- Undertake such other duties within the scope of the post as may be requested by your Manager.
- Work supportively with colleagues, operating in a collegiate manner at all times.

**Help maintain a safe working environment by:**

- Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand.

Following local codes of safe working practices and the University of Surrey Health and Safety Policy.

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## Elements of the Role

This section outlines some of the key elements of the role, which allow this role to be evaluated within the University's structure. It provides an overview of what is expected from the post holder in the day-to-day operation of the role.

### Research and Software Development

- Conduct research and software development within the context of a collaborative research project, comprising of partners from research and industry organisations. The project aims to create a chatbot based on AI that functions on pre-defined data.
- Develop the back-end pre-defined data by scraping open source information online.
- Develop tools to record information from the chatbot into a database.
- Develop a user-friendly web interface to view recorded information.

### Software Testing
- The post holder is expected to verify through debugging, troubleshooting and unit testing the correct operation of the produced code.
- The post holder is also expected to verify operations of the developed software and its integration with other software modules from other partners.
- The post holder is required to test their work both with validation suites to ensure compliance with standards.

### Continuous Delivery and Improvement
- The post holder will be responsible for deploying in the project's infrastructure and periodically update its developed codebase in accordance with the technical roadmap and release updates.
- The post holder is expected to be responsible and proactive in resolving issues, identifying solutions and fixes for the deployed software due to feedback from the Use Case deployment or decisions by project consortium regarding changes to requirements.

### Accountability
- The post holder is required to document and maintain its codebase through documentation and version control software (i.e. GitLab, GitHub)
- The post holder needs to document software architecture, installation procedures, deployment configurations as well as provide support to peers and third parties requiring information.
  - The post holder needs to have a can-do aptitude, be proactive and independent and work in coordination and guidance from the Project Investigator and senior peers.

### Supplementary Information

- A talent for technical problem solving is a must. You will encounter a wide range of technologies and data and will be given many opportunities to build new skills. We don't expect you to be proficient in everything, but it is vital that you enjoy exploring new areas and learning new technologies. You will have opportunities to work on several areas within the project, however the primary research and development aspect of the role will be in the development of technologies for data management, analysis, quality preservation and enrichment using AI technologies, and also tools for search and discovery for these datasets.

## Person Specification
This section describes the sum total of knowledge, experience & competence required by the post holder that is necessary for standard acceptable performance in carrying out this role.

### Qualifications and Professional Memberships

| Relevant degree (in Electronics Engineering or Computer Science) | | E |
|---|---|---|
| **Technical Competencies (Experience and Knowledge)** This section contains the level of competency required to carry out the role (please refer to the Competency Framework for clarification where needed and the Job Matching Guidance). | **Essential/ Desirable** | **Level 1-3** |
| Proven experience with the Rasa framework or similar conversational AI technologies. | E | 3 |
| Experience with programming in Python, Java, or JavaScript in the context of data management and analysis for web-based solutions. | E | 3 |
| Familiarity with NLP and machine learning techniques. | E | 3 |
| Experience in NLU model training, dialogue management, and bot deployment. | E | 3 |
| Knowledge of conversational UX/UI design best practices. | D | 3 |
| Experience with tools for source code management and CI/CD, such as GitHub, GitLab, Bitbucket, Maven etc. | D | 3 |
| **Core Competencies** This section contains the level of competency required to carry out this role.  (Please refer to the competency framework for clarification where needed). n/a (not applicable) should be placed, where the competency is not a requirement of the grade. | | **Level 1-3** |
| Communication<br>Adaptability / Flexibility<br>Problem Solving<br>Creative and Analytical Thinking<br>Autonomous | | 3<br>3<br>3<br>2<br>3 |

This Job Purpose reflects the core activities of the post. As the Department/Faculty and the post holder develop, there will inevitably be some changes to the duties for which the post is responsible, and possibly to the emphasis of the post itself. The University expects that the post holder will recognise this and will adopt a flexible approach to work.  This could include undertaking relevant training where necessary.

Should significant changes to the Job Purpose become necessary, the post holder will be consulted and the changes reflected in a revised Job Purpose.

**Organisational/Departmental Information & Key Relationships**

**Background Information**.

The University of Surrey is an international University with a world class teaching and research profile that is innovative, forward thinking and achieving notable results. Our research seeks to address global challenges, drive innovation, and deliver real-world impact. This post will be administered under The Department of Microbial Sciences, School of Biosciences, Faculty of Health and Medical Sciences and is funded by Zoetis S.A. The Department of Microbial Sciences has a long record of studying microorganisms to further our understanding of basic cellular mechanisms and diseases.

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## **Department Structure Chart**

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            │ Project Investigator │
            └──────────┬──────────┘
          ┌────────────┴────────────┐
┌──────────────────────┐  ┌──────────────────────┐
│ Research software    │  │ Research software    │
│ engineer             │  │ engineer             │
└──────────────────────┘  └──────────────────────┘
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