Job Title:	Research Fellow A

Responsible to:	Head of research group, or principal investigator

Responsible for:	Not applicable

Job Summary and Purpose:

To undertake research in accordance with the specified research project(s) under the supervision of the principal investigator.

Main Responsibilities/Activities

To undertake a range of research activities within a specified research area, assuming responsibility for specific areas of projects and making use of new research techniques and methods, in consultation with the research award holder or supervisor. This may include fieldwork, interviews, laboratory experimentation, critical evaluation and interpretation, computer-based data analysis and evaluation or library research.

Using initiative and creativity to identify areas for research develop new research methods and extend the research portfolio. Analysing and interpreting results of own research. Write up results and prepare papers for submission to appropriate journals and conferences, and other outputs as required and/or appropriate. Attend appropriate conferences for the purpose of disseminating research results of personal development. The post holder may also contribute to writing bids for research grants and will contribute to collaborative decision making with colleagues in areas of research.

Continually to update knowledge and develop skills, and translate knowledge of advances in the area into research activity.

To plan and manage own research activity in collaboration with others. To carry out administrative tasks associated with specified research funding, for example risk assessment of research activities, organisation of project meetings and documentation. Implementation of procedures required to ensure accurate and timely formal reporting and financial control.

To contribute to teaching in the Faculty by carrying out student supervision and/or demonstrating within the post holder's area of expertise and under the direct guidance of a member of departmental academic staff, as appropriate.

The post holder may occasionally be required to supervise more junior research staff.

Person Specification

The post holder must have:
A doctoral degree in a relevant discipline (although individuals who have almost completed a doctoral degree may be appointed). Consideration may also be given to individuals who do not hold a doctoral degree but have required skills based on a number of years experience in specified / relevant fields
The post holder will have authority over some aspects of project work and must be capable of providing academic judgement, offering original and creative thoughts and be able to interpret and analyse results.

Relationships and Contacts

Direct responsibility to the principal investigator or academic supervisor. The post holder may be asked to serve on a relevant Faculty committee. There may be additional reporting and liaison responsibilities to external funding bodies or sponsors. The post holder may work on original research tasks with colleagues in other institutions.

Special Requirements

To be available to participate in fieldwork as required by the specified research project

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.

- 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

- Undertake such other duties within the scope of the post as may be requested by your Manager.

Addendum

This document provides additional information relating to both specific aspects of the post/faculty and any post specific person specification criteria. The information contained within this document should always be read in conjunction with the accompanying generic Role Profile.

Job Title:	Research Fellow in Longitudinal NLP

Job Purpose and Summary

(i) Design and develop ML models for longitudinal text equivalence in large longitudinal questionnaire datasets, taking advantage of recent developments in contextual text entailment approaches, generative AI and human-in-the-loop techniques. The developed models with take into account relevant open taxonomies and ontologies.

(ii) Work with social science researchers towards designing text classification strategies for annotation of questionnaire elements to an established taxonomy (ontology) to support discovery.

(iii) Collaborate with other project partners to develop pilot and proof-of-concept tools and systems to visualise the model results through graph networks.

(iv) Report orally and prepare papers reporting progress and delivery of project outcomes and be able to communicate at both technical and high-level, for example with project research partners.

(v) Perform any other duties associated with the project, as deemed appropriate to the grade by the Principal Investigator.

Main Responsibilities/Activities

In general, to support the Principal Investigator of the MetaCurate-ML project in achieving the goals of that project, under her direction.

Undertake the development of research outputs and ML models for MetaCurate-ML.

Take responsibility for elements of the planned research, plan and carry out a work programme appropriate to the research activity.

Meet on a weekly basis on campus with project staff and PhD students.

Contribute to the writing of research grants.

Attend project meetings and present results at other sites as required.

Give oral and written reports on project progress and outcomes.

Contributing to dissemination and publication of personal and/or research teams findings as appropriate.

Continually update knowledge and develop skills

Carry out routine administrative tasks associated with a specified research project, for example risk assessment of research tasks, organisation of project meetings and documentation. This

will entail planning own day-to-day research activity within the framework of the agreed programme, dealing with problems that may affect the achievement of research objectives and deadlines and implementing procedures required to ensure accurate and timely delivery.

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. This is in addition to the criteria contained within the accompanying generic Role Profile.

	Essential/ Desirable
PhD (gained or near completion) or equivalent professional experience in Natural Language Processing, Machine Learning, or a related discipline.	Essential
Research experience in topics relevant to the research project, such as state-of-the-art deep learning techniques, and zero-shot techniques.	Essential
Strong programming skills; experience with Python NLP and deep learning libraries (e.g., HF Transformers, PyTorch, or TensorFlow).	Essential
Experience and evidence of effective independent research work within a team. More broadly, demonstrated ability to plan and execute a research project, solve problems independently, and make original contributions to a research field.	Essential
Experience with NLP (e.g., working with LLMs, multi-GPU inference and training, parameter-efficient fine-tuning, text equivalence and entailment) and machine learning (e.g., multi-task learning, reinforcement learning, and neuro-symbolic integration).	Desirable
Experience in software development and creation of web-based tools and systems	Desirable
A track record of publishing academic papers, open-source software tools and/or research datasets.	Desirable

Background Information

This should be read in conjunction with those contained within the accompanying generic Role Profile.

The METACURATE-ML project is a 1-year pilot, funded by the ESRC Future Data Service, that brings together CLOSER, UK Data Service (UKDS), the Computer Science Department at the University of Surrey, and the Scottish Centre for Social Research (ScotCen) to generate metadata which is FAIR ready and can be utilised by emerging data services.

The specific challenges the project seeks to solve are:

The large-scale capture of questionnaire metadata into mature standards (DDI-Lifecycle), by extending existing work using pre-trained language models with recent developments from vision research and zero-shot techniques. This will allow us to extract the specific items with questionnaires such as question texts, responses and routing to create a rich source of metadata which provenances' data collection methodology to the resultant data. Growing Up in Scotland will be the candidate study for this automated extraction.

This rich metadata will be annotated with conceptual and vocabulary information which aligns with the European Language Social Science Thesaurus, originally developed at UKDS and now deployed across 26 countries, using the 50,000 questions available in CLOSER Discovery as the base training dataset.

Conceptual annotations and provenance can provide contextual information to inform a range of data processing activities. In this project we will be combining such metadata with the data itself to allow evaluation of data items to assist with human-in-the-loop automated disclosure evaluation.

Fuller description of the project and previous related work can be found at https://metadata-automation.org

Relationships and Contacts

Direct responsibility to the academic supervisor, Suparna De. The postholder will also work with the other PhD students as supervised by the project PI and with project partner academics and developers.

N.B. The above list is not exhaustive.