



## Job Description

### Research Fellow in Natural Language Processing (NLP) for the Violence, Health, and Society (VISION) Consortium

**Department:** UCL Computer Science

**Information Session:** 15 Dec 2022

**Closing Date:** 16 January 2023

**Interview Date:** Early February 2023

**Grade:** 7 (£38,308 - £46,155)

**Working Pattern:** Full-time

**Starting Date:** 1 May 2023 (or earlier)

**Duration:** 18 months

**Location:** London, Bloomsbury

**Contract Type:** Fixed-Term

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#### Reports to:

Dr Leonie Maria Tanczer, Associate Professor in International Security and Emerging Technologies

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#### Context

The UCL Department of Computer Science is the leading computer science research department in the UK. In the 2021 Research Excellence Framework (REF) evaluation, UCL Computer Science was ranked second in the UK for research power and first in England.

The “Gender and Tech” research group within the Department investigates the intersection points of technology, security, and gender. We are pursuing an interdisciplinary research agenda from two angles: On the one hand, we study how and why gendered assumptions mold our technological systems and affect their representation, design, as well as usage and control. On the other hand, we examine the dynamics that enable digital technologies to construct and reinforce gender and other social categories such as race, class, age, or sexuality.

We are an open and welcoming research hub for people interested in societal and policy relevant research questions. We train and support the next generation of scholars and practitioners comfortable in both social and technical research domains and value and endorse movement between disciplines, organisations, and sectors.

This role is meant to support the Violence, Health, and Society (VISION) Consortium, led by City/University of London. The Consortium was funded by the UK Prevention Research Partnership (UKPRP) for five years from 2021 to 2026.

VISION brings together public bodies, universities, and third sector organisations and aims to reduce the harms to health caused by violence by improving the data that underpins theory, policy, and professional practice.

The Consortium involves academic partners from the Violence and Society Centre at City/University of London, University College London, King’s College London, Lancaster University, University of Bristol, University of Warwick, University of Central Lancashire, and Public Health Wales.

The Consortium works closely with data providers in *public services* (including police, justice, and health professionals), *third sector specialist services* to survivors of domestic and sexual violence, and *national surveys*, including the Crime Survey for England & Wales, Adult Psychiatric Morbidity Survey, and the UK Household Longitudinal Study.

Using advanced computing techniques to code information and integrate these different data sources, the Consortium will investigate the effectiveness of interventions to reduce violence and, thus, reduce harms to health and health inequalities.

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## Main purpose of the job

The successful candidate will work as part of the “Tech Abuse Thread” of the VISION Consortium and will be based within the “Gender and Tech” research group at UCL, under the line management of Dr Tanczer.

The purpose of the role is to pursue high quality NLP research (particularly in building classification and information extraction models) to analyse large datasets relating to domestic abuse.

The post will suit someone with knowledge of a wide range of machine learning models for text classification, including traditional and deep models, and who is looking to apply their knowledge in a real-world domain with a high impact.

The Research Fellow will work on the following datasets:

- Refuge
- National Centre for Domestic Violence (NCDV)
- Integrated VISION Dataset

They will analyse these sources of data to answer the following research questions:

- What is the extent of technology-facilitated abuse evident in UK datasets?
- What is the nature of technology-facilitated abuse apparent in UK datasets?
- What is the relationship and/or potential overlap of technology-facilitated abuse with other established concepts and measurements already existent in the field (i.e., violence, coercion, crime)?

The research will help to:

- Advance the definition, terminology, collection, and measurement of tech abuse in surveys and administrative data sets.
- Understand the scale and nature of diverse forms and manifestations of tech abuse and clearly delineate it from other forms of power and harm.
- Study the relationship of tech abuse with other forms of violence and non-physical forms of coercion.
- Establish initial predictors (e.g., background of perpetrator) that can signify routes towards tech abuse.
- Establish foundations to conduct systematic/longitudinal analyses of tech abuse which can lead to the development of a theory of change.

Collaborations with other VISION research “threads” (beyond “Tech Abuse”) are strongly welcomed.

The appointee is encouraged to use this position as an avenue to develop as an independent researcher and will be actively supported in doing so.

The post will run from 1 of May January 2023 until 1 of November 2024 (18 months), in the first instance.

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## Candidate’s profile

Please consult the selection criteria (See: Person specification) for details on the candidate’s aspired profile.

We are looking for someone that is passionate about Natural Language Processing, determined and motivated to learn (especially on their own), and has strong problem-solving abilities.

Most profoundly, we are looking for a technical person that can and is excited to engage in non-technical discussions and collaborate with a non-technical audience such as social scientists. Prior knowledge of the research on tech abuse, domestic abuse, and intimate partner violence is welcomed, but not a must for this role.

As London’s Global University, we know diversity fosters creativity and innovation. We, thus, encourage applications from a diverse and broad pool of backgrounds and are committed to offer a fair and inclusive selection process.

We particularly encourage applications from candidates who are likely to be underrepresented in UCL’s workforce. These include people from Black, Asian, and ethnic minority backgrounds; disabled people; LGBTQI+ people.

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## Duties and responsibilities:

### Research

- Undertake **high-quality, original research** under the line management of Dr Tanczer and as a member of the VISION Consortium.
- **Wrangle, clean and process datasets, and supervise manual labelling of datasets** at regular labelling meetings.
- Build custom (or adapt existing) **text classification and information extraction models** for context specific use.
- **Evaluate and test models** on messy, real-world data. Be able to discuss the pros and cons of different evaluation and testing protocols within the tech abuse context.

- Implement and manage **machine learning pipelines** including evaluating different stacks and backend options for large models (e.g., Azure vs. AWS vs. university-based hosting)
- Ensure that models and datasets adhere to **ethical and explainable machine learning principles** and have an awareness of the importance of these issues and relevant frameworks (e.g., FAIR datasets; Accountability Transparency & Responsibility (ART) etc.)
- Actively **co-create the direction** of the “Tech Abuse Thread” and the VISION Consortium, dealing effectively with problems and challenges which may affect outcomes and deliverables.
- Complete **Disclosure and Barring Service (DBS) check as well as UK security clearance (NPPV3 and CTC)** to handle sensitive data.
- **Keep abreast of developments** in Natural Language Processing and the specialist domain of “tech-abuse” and related disciplines.
- Prepare and **submit material for peer-reviewed publication** in high-impact national and international journals and conference proceedings.
- Prepare and **present research findings** in suitable formats to the scholarly community, external partners, as well as non-specialist audiences.

### Planning and Organisation

- Plan **own day-to day activity** within framework of the agreed research programme to allow for deadlines to be met.
- Ensure secure and compliant **data handling and storage**. Conform with requirements to work from the Trusted Research Environment (TRE) hosted by City/University of London.
- Keep **comprehensive records** in accurate, timely, clear, and reproducible manner of all meetings and research activities conducted.

### Administration

- Carry out **routine administrative tasks** associated with the research to ensure that deliverables are completed on time and within budget. These might include organisation of project meetings and documentation; financial control (i.e., work with expense claims); ethics, data protection, risk assessment of research activities.
- Provide **guidance and supervision** – as required and within the post holder’s area of expertise – to junior staff and students who may need assistance with their research.
- Coordinate and liaise with Dr Tanczer and other Consortium members **over work progress and**

**ensure research resources** are used in the most effective manner.

### Engagement

- Engage in **discussions with non-technical partners**. Explain technical concepts to a social science audience.
- Demonstrate **impact** in research and, through this, help inform policy and public life.
- Contribute to **dissemination and public engagement activities**, including the planning/organisation/promotion of events such as webinars.
- Assist with the development of **promotional or educational material** including a website, monthly newsletter, and other public-facing resources (e.g., infographics, factsheets, briefing cards).
- Support with (and help track) **media and policy engagement**.
- Liaise on a regular basis with **stakeholders, user partners, and colleagues**, including charities, community groups, law enforcement, policy actors, and/or industry stakeholders. Help build and expand the research group’s contact network to share information and form relationships for future collaboration.
- **Represent** the Consortium at externally facing events and meetings.

### Other:

- Pursue academic excellence through **continuing academic, professional and personal development**.
- Participate in and contribute to **staff review** and development.
- Attend **UCL/VISION staff meetings, committees, and training**, as required.
- Demonstrate **zero tolerance** towards bullying, harassment, and discriminatory behaviour.
- Actively follow and promote all **UCL policies** including those on Equality, Diversity and Inclusion.
- Maintain an awareness and observation of current **UCL Fire and Health & Safety Regulations** and procedures.
- Demonstrate ongoing commitment to excellence in line with the **Academic Career Framework**.
- Meet UCL’s expectations set out in the **UCL Core Behaviours Framework**.

The above list is not exhaustive. The job description reflects the present requirements of the post. However, the post holder may be required to undertake other duties within the scope and grading of the role and as

responsibilities change/develop. Job descriptions are therefore reviewed on a regular basis including at the annual appraisal and subject to amendment in consultation with the post-holder.

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## What we offer

As well as the exciting opportunities this role presents, UCL also offers some great benefits some of which are outlined below:

- 41 days holiday (27 days annual leave 8 bank holiday and 6 closure days)
- Additional 5 days' annual leave purchase scheme
- Defined benefit career average revalued earnings pension scheme (CARE)
- Cycle to work scheme and season ticket loan
- Immigration loan
- Relocation scheme for certain posts
- On-site nursery
- On-site gym
- Enhanced maternity, paternity and adoption pay
- Employee assistance programme: Staff Support Service
- Discounted medical insurance

Visit <https://www.ucl.ac.uk/work-at-ucl/reward-and-benefits> to find out more.

## The successful applicant can also make use of the following post-specific benefits:

- Travel budget
- Secondments and placement opportunities
- Media coaching
- Counselling

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## Application process

Please apply through the UCL online recruitment portal (<http://www.ucl.ac.uk/hr/jobs/>) by 11.59pm on Monday, 16 January 2023.

Applicants are required to upload a CV (with a list of qualifications and publications) and a 1-2-page Cover Letter. In the Cover Letter, please explain how you meet the selection criteria for the post using examples of your skills and experience. This may include experience gained in education or employment.

References are not needed at the initial submission stage but will be asked from applicants that have been shortlisted (i.e., at the interview stage). Please ensure that your referees are aware and will be able to provide references at short notice, if requested.

Shortlisted candidates will be invited to a (approx. 45 mins) panel interview at the beginning of February 2023.

To test essential skills and abilities outlined in the Person Specification, applicants invited to an interview will also be asked to conduct a competence-based test on their NLP skills as part of the recruitment process.

A pre-application information session will be held on Thursday, 15th of December at 3pm (GMT). The event will outline information on the VISION Consortium, "Gender and Tech" research group, the post, application requirements, and support and training opportunities offered to any successful candidate. It will also give applicants the chance to ask questions to the prospective line manager (Dr Tanczer) ahead of the submission deadline. The session will be recorded for those unable to attend. Join the pre-application information session here: <https://ucl.zoom.us/j/92249766429> (Meeting ID: 922 4976 6429).

Please let us know if you need any adjustments to the recruitment process, including the provision of these documents in large print, audio, or other formats. If we invite you for interviews, we will ask whether you require any arrangements at the interview.

Feedback will be offered to all applicants invited to an interview. We regret that we are unable to provide feedback at any earlier stage of the application process.

Informal enquiries should be made to Dr Tanczer ([l.tanczer@ucl.ac.uk](mailto:l.tanczer@ucl.ac.uk)).

We strongly encourage applicants that do not fulfil the job specifications for this role but are passionate about the research project to get in touch with us as more opportunities will open in the future.

# Person specification

Criteria	Essential Desirable	or	Assessment method  (Application/Interview)
<b>Experience and knowledge</b>			
A completed <b>PhD, or close to obtaining a PhD</b> , in a relevant discipline	Essential		A
Expertise and research interests in <b>machine learning for text classification and information extraction</b> , or equivalent data science/computational linguistics experience	Essential		A/I
Proficiency in the <b>Python</b> programming language	Essential		A/I
Familiarity with <b>machine learning libraries</b> (e.g., Scikit-learn, TensorFlow, PyTorch, Pandas, spaCy, HuggingFace)	Essential		A/I
Experience <b>working with real-world datasets</b> (i.e., cleaning, and wrangling messy data), demonstrated through professional/academic/hobby projects	Essential		A/I
Experience of working with a range of <b>machine learning models for text classification</b> , including traditional and deep models	Essential		A/I
A <b>publication record</b> , commensurate with the candidate's career stage	Essential		A
Experience <b>constructing and labelling a dataset</b> from real world data	Desirable		A/I
Experience of <b>explaining technical material to a non-technical audience</b> e.g., through formal or informal teaching, talks or outreach activities, and engagement in interdisciplinary research	Desirable		A/I
Knowledge of research on <b>tech abuse, domestic abuse, and intimate partner violence</b>	Desirable		A/I
Evidence working with <b>non-academic, external stakeholders</b> such as charities, community groups, law enforcement, policy actors, and/or industry stakeholders	Desirable		A/I
Research and/or work experience engaging with <b>highly sensitive data</b>	Desirable		A/I
Experience in <b>archiving and depositing</b> research data	Desirable		A/I
Experience in responding to <b>consultations and requests for policy briefings</b>	Desirable		A/I
<b>Skills and abilities</b>			
Strong <b>programming/data science skills</b>	Essential		A/I

<b>Criteria</b>	Essential Desirable	or	Assessment method  (Application/Interview)
Excellent <b>written and verbal communication and presentation skills</b>	Essential		A/I
Ability to pass <b>Disclosure and Barring Service (DBS)</b> as well as <b>UK security clearance</b> (i.e., NPPV3 and CTC)	Essential		A/I
Ability to <b>travel and partially work at City/University of London</b> to attend meetings, access secure data storage (i.e., TRE), and meet with VISION colleagues	Essential		I
Ability to <b>plan for and work to competing deadlines</b> whilst maintaining accuracy and focus	Essential		A/I
Ability to <b>write up research findings for publication</b> in high profile, peer-reviewed journals, and conference proceedings	Essential		A
<b>Public dissemination competency</b> to convey research findings via a range of different media (i.e., social media, newsletters, factsheets, infographics, briefing cards, blog posts, press releases, opinion pieces).	Desirable		A/I
<b>Website</b> set-up/maintenance	Desirable		A/I
<b>Attributes</b>			
Commitment to <b>high-quality research</b>	Essential		A/I
Interest in and enthusiasm for the <b>subject matter of post</b>	Essential		A/I
Commitment to <b>sustainable software development</b> (i.e., documenting, testing, and sharing software, and use of tools like GitHub etc.)	Essential		A/I
<b>Proactivity</b> and <b>attention to detail</b>	Essential		A/I
Ability to <b>plan and prioritise own work</b> in order to meet deadlines	Essential		A/I
Ability to <b>work as part of a team as well as independently</b> using own initiative	Essential		A/I
Understanding of and commitment to follow <b>privacy and security guidelines/best practices</b>	Essential		A/I
Commitment to <b>pursue ethical research</b> in consideration of the possible impacts on vulnerable individuals and groups	Essential		A/I
Commitment to <b>continuing professional development</b>	Essential		A
Commitment to <b>UCL's policy of equal opportunity</b> and the ability to work harmoniously with colleagues and students of all cultures and backgrounds.	Essential		I