**Job Description**

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| **Job title** | Research Associate |
| **Department/School** | Computer Science |
| **Job family** | Education and Research |
| **Grade** | 7 |
| **Reporting to** | Dr Willem Heijltjes  |
| **Responsible for** | No staff management responsibilities |
| **Location** | University of Bath premises  |

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| **Background and context** |
| We are seeking an excellent postdoctoral candidate to perform research in the intersection of deep-inference proof theory and typed lambda-calculi. The research aims are to develop theories of proof normalization in intuitionistic deep inference, implement these in typed lambda-calculi, graph-rewriting formalisms, and abstract machines, and apply semantic tools such as intersection types to quantify their efficiency. The successful applicant will be expected to carry out the majority of this research programme, and record the outcomes in high-quality conference and journal submissions.Previous experience in one or more of the following areas is essential: deep-inference proof theory, typed lambda-calculi, sharing graphs and optimal reduction, quantitative semantics (intersection types/relational models) of the lambda-calculus. |

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| **Job purpose** |
| To provide subject-specific research assistance under the direction of Dr Willem Heijltjes on the EPSRC-funded research project `Typed Lambda-Calculi with Sharing and Unsharing’. |

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| **Main duties and responsibilities**  |
|  | Report to Dr Willem Heijltjes on the following. |
| **1** | Conduct individual and collaborative research on the project `Typed Lambda-Calculi with Sharing and Unsharing’.  |
| **2** | Produce research reports and prepare papers for submission to high quality, peer reviewed academic conferences and journals. |
| **3** | Disseminate the research through workshop presentations and conference visits. |
| **4** | Work with collaborating researchers, travel to visit them, and organise their visits to Bath. |
| **5** | Participate in group meetings and seminars, and deliver presentations on the project to the research group. |
| **6** | Assist with the organisation of local events such as seminars and workshops related to the research project or the research group. |
| **7** | Assist with the supervision of graduate students. |
| **8** | Continually update knowledge and understanding in field or specialism to inform research activity. |
| **9** | Identify sources of funding and provide assistance with preparing bids to funding bodies, to contribute to securing of funds for research. |
| **10** | Awareness of and compliance with the relevant Codes of Practice and regulations for the University and relevant discipline. |
|  | You will from time to time be required to undertake other duties of a similar nature as reasonably required by your line manager. You are required to follow all University policies and procedures at all times and take account of University guidance.  |

**Person Specification**

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| **Criteria** | **Essential** | **Desirable** |
| **Qualifications** |  |  |
| A PhD degree in a subject area of direct relevance for the project, or an equivalent professional qualification (or equivalent standard for overseas applicants) | √ |  |
| **Experience/Knowledge** |  |  |
| Post-doctoral experience in a subject area of direct relevance |  | √ |
| Demonstrates significant depth and breadth of specialist knowledge of subject matter to effectively contribute to the research programme | √ |  |
| Demonstrates awareness of latest developments in the field of research | √ |  |
| Demonstrates potential to publish in high quality, peer reviewed conferences and journals |  | √ |
| **Skills** |  |  |
| A developing ability to conduct individual research work, to prepare research proposals, and to disseminate results | √ |  |
| Ability to organise and prioritise own workload | √ |  |
| Ability to write research reports and to effectively disseminate outcomes | √ |  |
| Excellent verbal, interpersonal and written communication skills | √ |  |
| Proficiency in IT skills (as appropriate to discipline) | √ |  |
| **Attributes** |   |  |
| Innovation and creativity in developing solutions | √ |  |
| Enthusiasm and self-motivation | √ |  |
| Tenacity and commitment in working to achieve own objectives and overcome obstacles | √ |  |
| Ability to be an effective team worker | √ |  |