

Turing Defence and Security Programme

**Call for research proposals – information value,
information algebra, topological data analysis**

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INTRODUCTION

We invite Turing researchers (Turing Fellows, Turing Research Fellows, Doctoral Student Supervisors and others) and other academics from our partner universities to submit proposals for projects to be funded through the Turing's Defence and Security programme; a strategic partnership of The Alan Turing Institute with GCHQ and MOD (Dstl and JFC) on data science and AI research. Collaborators from other universities and industry are also encouraged to participate in projects led by Turing researchers.

The projects should be ~18 months long, start around October 2018, and finish by 31 March 2021.

The challenges under which this call is placed for this call for proposals are information value, information algebra and topological data analysis. These challenges have been posed by Dstl (one of the organisations involved in the wider partnership for the D&S Programme).

For reference, details on existing programme projects can be found online at <https://www.turing.ac.uk/research/research-programmes/defence-and-security>

Funding available

Three projects will be funded with up to £250k each. These should be 18-month projects, which can begin in **October 2019** and finish by **31 March 2021**. A front-loaded resourcing and spend profile to give a 50:50 split over the two financial years (a financial year being 1 April to 31 March) would be beneficial but is not a requirement.

Two of the projects may have further funding available for additional elements.

Projects will also have access to Programme contacts, industry expertise and meeting space at the Turing HQ in London.

The funding can be used for direct and indirect costs (100% FEC). More information on eligible costs is available [below](#). Please consult with your institution for guidance as to costs when you prepare your application.

Research challenges

This call is seeking proposals for projects addressing the three challenges outlined below. Proposals should address one challenge. An overview of each challenge is given below, with further details in [Annex A](#).

The value of information

The overall aim is to investigate, advance and apply techniques of modern mathematics over maritime situations to formalise the value of information in collaboratively generated intelligence from partitioned data sources.

Projects proposed should aim to advance the theory, implement the algorithms and assess the Defence capability change from emerging concepts of valuing sub-graph structure of information, which remains protected and hidden in the databases of collaborating-organisations and/or varied-classification partitions within a single

organisation (such as Defence). In moving from past work that seeks to value individual items of information with full visibility of the problem and information sources, we now seek a paradigm change to value information graph substructures using the property-designs of the PageRank algorithm. The algorithm shall be configured for a subset of agreed, Defence analytical tasks (such as anomaly detection, threat assessment, etc.). The collaboratively generated PageRank feature should then find application in machine learning to support and improve the Defence analytical tasks.

How much data is enough?

The overall aim is to create and apply new mathematical concepts and theories that formalise an understanding of what comprises a critical set of information to completely understand an event or activity of relevance to Defence.

The research challenge is to find a mathematical model of symmetries, such that for a given category of event and analytical task, Defence can generate a prescriptive and generative set of information modalities that would provide a complete understanding of that event.

Projects proposed should aim to generate new insights and theories in finding the abstract symmetries between sensing modalities. The initial application areas of Defence consideration are sensing modes associated with both strategic and tactical maritime domain awareness*.

Topological data analysis

The overall aim of this research is to exploit the topological properties of sparse, high-dimensional and noisy data to improve Defence's capability in maritime domain awareness* and ship-threat assessment during complex conflict or peacetime threat scenarios.

Projects proposed should aim to generate new insights and theories in the topological analysis of observational data and their early application into Defence challenges. Proposals should include consideration of improving how topological analysis could enhance maritime domain awareness*, with an additional (but equal) emphasis on advancing the fundamental topological analysis theories and the application of the theories in a prototyping activity to the maritime domain.

* In this context maritime domain awareness focuses on the understanding and assessment of shipping traffic including, but not limited to, the capabilities, actions and intent of those vessels over short (hours) and long (months) periods, covering tactical, operational and strategic levels.

APPLICATION PROCESS

We encourage pre-submission discussion on scientific direction of your proposal with the Programme Director, Mark Briers, dsprogramme@turing.ac.uk.

Any queries regarding process, post-award requirements, costing or general eligibility should be discussed with the Research Project Manager, Will Taylor (also on dsprogramme@turing.ac.uk).

Successful proposals will be funded through an award from the Turing.

The process summary is as follows:

- Written application completed by applicant and submitted online
- First stage: Programme Director and Research Project Manager perform initial review and check eligibility
- Second stage: applications which pass first stage are then sent to the Partners for review
- Partner reviews applications
- Successful applications selected
- Applicants notified of outcome by Research Project Manager

Eligibility

Principal Investigators (PIs) should be Turing researchers, or researchers affiliated with one of the partner universities. Collaborators on projects are welcome from anywhere outside the Turing or the partner universities.

How to apply

Applications must be submitted via the online portal at <https://ati.flexigrant.com/>. If you have not already done so, all applicants must first register on the system and provide basic details to create a profile. If you have any question regarding the application form or using the online system, contact the Research Project Manager via dsprogramme@turing.ac.uk.

By 2 August 2019 16:00, the PI should submit the following:

- Project title, dates, abstract (250 words), overall cost and details of funding requested
- Research statement (600 words): When writing your research statement, please consider the following:
 - *Approach: include a description of the scientific approach, aimed at an appropriate technical audience (i.e. broader audience than deep specialists in this subject area, but not a lay person). Answer questions such as: What is innovative about the proposed research? Why are you uniquely placed to undertake this task? What is the expected scientific impact? What is the expected application impact (where appropriate)?*
 - Images/figures to support research statement (if required)
 - References (publications referenced in Research Statement)
- Project plan, including timelines and additional resources required (whether via this fund or through in-kind contributions), with justification (maximum 2 pages, pdf format)
- CVs of all investigators, students, and any project collaborators named in the proposal (2 pages maximum per CV, merged into one file and uploaded as a single pdf)
- Consideration of risks and mitigations, assumptions, dependencies, exclusions and constraints (600 words max.)
- Impact statement, including desired/expected outputs and relevance to the challenge (500 words)

- Estimated cost profile (the final budget will be agreed at award agreement stage)
- Letters confirming intent to collaborate from any partners outside of the lead applicant (pdf format)
- Letter from head of department OR research support office confirming willingness to host the project if the application is successful, confirming costs have been checked and approved, and where applicable, outlining the process for oversight and approval for the project through the university's research Ethics Committee (or equivalent) (pdf format)

Eligible costs include:

- salary and overheads (not doctoral students) on FTE basis of personnel working directly on the project – this could include, for example, PIs, postdocs, research associates, data scientists or software engineers. We can provide funding at 100% FEC and this includes estates and indirects.
- travel and subsistence for project researchers when away from host university (e.g. attending conferences, travelling to/from the Turing)
- conference fees where conference is directly applicable to the research project
- support for travel and hosting of international visitors and research groups

Assessment

Proposals will be assessed based on the following criteria:

- Research excellence, including:
 - Technical diversity/interdisciplinarity
 - Clarity of project plan
 - Fit to challenge and requirements
 - Clarity of desired outputs and impacts
 - Clarity of plan for ethical oversight (if applicable)
 - Clarity and precision of technical ambition and innovation
 - Appropriately experienced and qualified research team
- Impact
 - Potential for pathways to deliver operational impact
 - Potential for further development/adoption by academia and/or industry
 - Involvement of collaborators beyond current Turing community
- Value for money
 - Reasonable and fully justified costs

POST-AWARD INFORMATION

Project meetings

Successful applicants will be expected to attend a kick-off meeting, quarterly progress meetings, and a project close meeting, with a Technical Partner from the D&S programme Partner/s. These may take place at the Turing, at Dstl, or at the project lead's university. Project leads will also be required to attend Dstl (Porton Down) for a

day (at a mutually agreeable date) to present an invited technical briefing to Dstl scientists on the latest research directions within their research group.

Funding agreement and payment

The university of successful applicants will be required to sign a funding agreement with the Turing through Turing Innovations Ltd, recording the terms and conditions of the award. Acceptance of the terms and conditions is a precondition to receiving the award. Interim and final payments will be released to universities or internally through the Turing on receipt of satisfactory outputs. Please note that the conditions of the funding from the partners are agreed in the partnership agreement with the Turing and therefore those conditions flow down into project agreements. A copy of the standard terms is available on request and applicants are encouraged to share this with their research office prior to submitting their application.

Screening of researchers

This research is not at a classified level so formal security clearance (see <https://www.gov.uk/guidance/security-vetting-and-clearance>) is not required.

Successful applicants will however be required to complete a personal particulars form for all staff working on their project. A sample form is provided in Annex B; this is an example and the actual form may differ. Turing Fellows, researchers and staff who are UK nationals and who have already completed a DBS-like screening via Agenda Screening as part on the onboarding at Turing, may be able to have this requirement waived by Dstl.

General outputs required

We require that all projects will produce the following:

- If applicable, the application to and approval from the relevant research ethics committee.
- Quarterly progress summaries (one page) and meetings.
- Interim code and/or report
- A final technical report that describes (in technical depth) the innovations of the research, together with the results of applying the research to maritime domain awareness and assessment.
- Material associated with the final demonstration (softcopy).
- Submission of at least two papers, reporting the research project, at international conferences or a journal. Pre-print copies of the papers shall be shared with Dstl.
- Source code, compilation and use documentation, together with an end-of-project demonstration that implements the theoretical findings within a maritime domain awareness and ship-threat assessment context.
- Attend Dstl (Porton Down) for a day (at a mutually agreeable date) to present an invited technical briefing to Dstl scientists on the latest research directions within their research group.

It would also be desirable to include, in the final technical report, a roadmap that records a forward-looking plan of subsequent work (in causal discovery) that could be undertaken, drawing on the understanding gained from the undertaken research.

Technical outreach (for example, through hosting workshops) to other universities to ensure the latest understanding is drawn on in advancing the research is also encouraged, as is joint publication with other universities.

Challenge-specific outputs required

In addition to the general requirements above, the following requirements apply to each challenge:

The value of information

- Innovation of world-class theoretical advances in new theory and strategies to provide automated assistance to decision-makers in maritime domain awareness/assessment and ship-threat contexts. This research will address the problem described in the 'background' section of this research solicitation.

How much data is enough?

- Innovation of world-class, theoretical advances in the theory and strategies of symmetries within and across diverse sensing modalities and the derivation of a critical set of modalities, conditioned on a set of events or activities.

Topological data analysis

- Innovation of world-class, theoretical advances in the theory and strategies of topological data analysis using datasets, drawn from the maritime domain.
- The successful application of machine learning to information drawn from topological data analysis.

All applicable outputs **must** be submitted to the Turing by **Wednesday 31 March 2021** (in the absence of any earlier applicable deadline).

Outputs acceptance criteria

The final report shall describe the entire project in sufficient detail to explain comprehensively the work undertaken and results achieved - including all relevant technical details of any hardware, software, process or system developed there under. The technical detail shall be sufficient to permit independent reproduction of any such process or system.

For advice and guidance on reproducibility, please visit The Turing Way project resources; the online book is available here: <https://the-turing-way.netlify.com/introduction/introduction> Contributions and discussion are also welcome here: <https://github.com/alan-turing-institute/the-turing-way#about-the-project>

If outputs do not meet the acceptance criteria, re-work will be requested before final acceptance.

Publications

Please note, approval from the D&S programme is sometimes required prior to publication; in such cases, approval will not be unreasonably withheld.

We encourage researchers to submit their findings to a high-quality peer-reviewed journal or conference, on an open-access basis (funding for open-access fees will be available on a case-by-case basis).

We expect a 'green' open access version of any papers to be published (if allowed by journal/conference - please check <http://www.sherpa.ac.uk/romeo/index.php>) either as a pre-print on (e.g.) the ArXiv (<https://arxiv.org/>) or in an institutional repository.

We also encourage datasets and research code to be openly shared too where possible - for example on the Turing's Github repository.

All publications, reports and code should reference the support of the Turing Defence & Security programme.

Reporting and dissemination

Extracts from reports may be collated into update papers for the D&S Programme Board, Strategic Partners Board, Turing Innovations Ltd Board, and the Turing's Trustee Board.

Awardees may also be required to present their work to members of the D&S programme, the D&S Programme Board and/or other invited audience during the award period.

Reporting allows further identification and signposting of potential additional opportunities for the benefit of the awardees and the Turing; for example, opportunities from across the Turing's network such as new collaborations, external/public engagement, media/press, other funding availability, speaking slots at or invitations to events/conferences/seminars.

KEY DATES

Publication of call for proposals	24 June 2019
Q&A sessions	9 July 2019, 09:00-12:00
Deadline to submit	16:00 on Friday 2 August 2019
Eligibility checking, resubmission requests	2-6 August 2019
Review and selection of proposals	Early August 2019
Award offers and acceptance of terms	Early-mid August 2019
Projects start	From 1 October 2019
Projects to complete and report by	31 March 2021 at the latest

Queries

For general queries about eligibility or administrative aspects, contact Will Taylor.

For more detailed queries on the research elements, potential applicants can book a meeting or phone call with representatives of the funders and the Turing on 9 July between 09:00 and 12:00.

Representatives will be available for 25-minute appointments. To book your slot, please complete the form here: <https://doodle.com/poll/4awnicbeik29fnab> In the 'Your name' box, please enter your name along with F2F for in person meeting, TC for telephone call or S/Z for via Skype or Zoom.

If you are not able to book a slot on 9 July, please email dsprogramme@turing.ac.uk and we will try to book you a time on another day.

CONTACT

Will Taylor, Research Project Manager

Mark Briers, Programme Director

dsprogramme@turing.ac.uk

ANNEX A

The value of information

Background

PageRank is a measure of centrality (importance) for all vertices on a directed graph. With its origins in the Google search-engine design, it is used to rank pages (hits) returned from a text search. The graph in question has each page crawled as a vertex and hyperlinks between pages represented as edges between vertices. The user search comprises two separate operations though (a) text search, (b) ranking of results using the PageRank algorithm. The PageRank algorithm is published and widely implemented. PageRank is in Apache Spark [1] for example, which is a Big Data framework that Dstl is using. Apache Spark allows the user to construct a large graph and then run PageRank on that graph.

Defence analysis (including maritime domain awareness) is undertaken mostly in a secure, enterprise landscape by drawing on information from different levels of security and from many organisations, both nationally and internationally. However, legal and ethical considerations impose appropriate constraints on the sharing of information between organisations. The value of information is difficult to estimate in such a network of collaboration, where no single analyst has global sight of the entire set of relevant information. In this research solicitation, we seek to advance understanding and capability (under novel mathematical approaches of graph theory (relational structures) and homomorphic encryption (operating on encrypted information)) to appropriately value information sub-graphs (hosted in protective organisations and/or partitioned, classified databases) using design variations of the PageRank algorithm for Defence-specific analytical tasks. The proposal seeks to advance and enrich a similar concept to that described in an intriguing 2018 paper in the Cryptology ePrint Archive [2]. In that publication, the vertices of a transaction graph are the bank accounts and the graph edges are financial transactions. In our dynamic graph, the graph vertices would be 'entities of interest' and graph hyper edges shall be their 'relational properties'. The goal is to achieve a solution design that would support (in prototype concept) secure multiparty computation through the use of collaboratively generated PageRank features from the hidden subgraphs across organisational or classification partitions. If successful, this emerging concept offers a broad utility across Defence Data Science. The research should consider and address the scalability of the solution design to large graphs and prove the security, additive-homomorphism and stability of the core design. The approach should then examine and assess derivative variants of the PageRank concept that might be implemented through moving to fuller homomorphic schemes. The research should assess the solution design with a graph data set of relevance to maritime domain awareness. The construction and filtering design of the edge sets (for specific Defence analytical tasks) should form part of the study.

[1] Apache Spark, Class definition, Web URL
<http://spark.apache.org/docs/1.5.1/api/java/org/apache/spark/graphx/lib/PageRank.html>
(Accessed 29th March 2019)

[2] A. Sangers, M. van Heesch, T. Attema, T. Veugen, M. Wiggerman, J. Veldsink, O. Bloemen, D. Worm, Secure multiparty PageRank algorithm for collaborative fraud

detection, pre-print, 2018, Web URL <https://eprint.iacr.org/2018/917.pdf> (accessed 29th March 2019).

Approach

This research requirement seeks to advance a new model (and associated prototype micro-services) for collaboratively valuing information. The research shall support Defence analytical tasks, that allows for (and responds to) requests for information (RFIs) from decision makers.

After a start-up discussion with Dstl (at which mutual understanding will be achieved and the Defence maritime domain challenge scoped and detailed) the project lead/s shall define, agree and commit to the information value challenge(s) to be addressed in the work. Novel research will be undertaken in the first year to advance the calculation of information value (with the Defence constraints in mind). This shall explicitly draw on state of the art research from academia. The undertaken research will be theoretically, rather than empirically driven, with selective validation undertaken on suitable datasets. In undertaking this approach we seek to achieve leaps of advance through new concepts, rather than incremental improvement through minor, extant algorithm modification. Opportunities for publication at leading conferences or in journals should be exploited to ensure the external peer review of the undertaken research. The last six months of the research should focus on the implementation of theoretical achievements and its clear demonstration to Defence stakeholders. Increased liaison with Dstl will be required in the last six months to agree the demonstration-related provisions and organise the Defence component of the demonstration (e.g. stakeholder invitations). The demonstration should be undertaken at the Dstl Porton Down site at a date of mutual convenience (but during February/March 2021).

How much data is enough?

Background

In seeking to understand an event, Defence and Security traditionally gather (both opportunistically and through the tasking of owned assets) as much information as possible from a diversity of sources and reason over this set of evidence. The notion of a complete (or sufficient) set of information to support that reasoning is presently undefined. An enduring, open problem in Defence and Security is, “how much information is enough?” A candidate path to finding a generative set of information may be to investigate the concept of smallest critical sets in Latin squares (Cayley tables of quasigroups). The challenge may then be rephrased as, “can we find and represent the abstract symmetries of sensing modalities as a quasigroup?” If so, a smallest critical set of information symmetries naturally emerges (from which the complete set of symmetries is uniquely generated). The premise of this task is that (for a given event and a given analysis task) Defence may use the generative symmetries to prescribe a minimal sensor information set to satisfy the analysis task.

Approach

This research requirement seeks to understand if (and how) we might map the symmetries across diverse information sensing modes. Information may be described qualitatively as data in context. Within the context of a subset of distinct events, the

challenge is to generate abstracted models of information, their symmetries, combinatoric products and the abstracted space(s) of the physical and virtual world which they estimate. While information theory offers a statistical approach to information for storage and communication (enriched representations being researched elsewhere) we seek a mathematical, information algebraic approach to the problem. The required, scientific approach would understand, theorise and test model representations based on quasigroups (or other group theoretic structures, from magmas to groups) towards understanding critical (generative) sets of information actions (structure-preserving mappings between sensing representations) from their modal symmetries. The Defence premise is that there are unexploited symmetries (evident as algebraic structures) that reside within information representations. The research would not take an empirical approach to the research by examining particular sets of information. Instead, the research would bridge pure mathematics and applied mathematics by deriving candidate solutions theoretically (drawing from the many fields of mathematics) and (only then) testing the found models on sample information sets. We seek a mathematical (logical) solution rather than a statistical solution (based on random variations). The research could draw on lattice symmetries, the representation theory of groups and category theory of groups or vector spaces. Initial interest is towards application in the domains of maritime domain awareness (shipping operations).

After a start-up discussion with Dstl (at which mutual understanding will be achieved and the Defence maritime domain challenge scoped and detailed) the project lead/s shall define, agree and commit to the symmetry challenge(s) to be addressed in the work. Novel research will be undertaken in the first year to advance relevant theory (with the Defence constraints in mind). This shall explicitly draw on state of the art research (usually less than three years old) from academia. The undertaken research will be theoretically, rather than empirically driven, with selective validation undertaken on suitable datasets. In undertaking this approach we seek to achieve leaps of advance through new concepts, rather than incremental improvement through minor, extant algorithm modification. Opportunities for publication at leading conferences or in journals should be exploited to ensure external peer review of the undertaken research. The last six months of the research should focus on the implementation of theoretical achievements and its clear demonstration to Defence stakeholders. Increased liaison with Dstl will be required in the last six months to agree the demonstration-related provisions and organise the Defence component of the demonstration (e.g. stakeholder invitations). The demonstration should be undertaken at the Dstl Porton Down site at a date of mutual convenience during February/March 2021.

Topological data analysis

Background

In Defence, we are often interested in more than the statistics of a data set. We are interested in its structure (shape) at various levels of detail. Analysts have an intuitive ability to acquire and maintain recognition and understanding as transformations of shapes in data evolve. The mathematical formalisation of shapes in data resides in the theory of topology. Topology supports an understanding of the invariance of shapes under continuous stretching. As such, it allows us to encode notions that are intuitive to our analytical reasoning of form (shape) yet are difficult to express explicitly within the

limitations of language. We seek scalable understanding of connectivity and vertex importance. Since graphs arise as discrete approximations of higher-dimensional topological objects, yielding analogous topological properties, we are interested in understanding those higher-dimensional representations. The time varying dynamics of the topology should be considered to support decision making. A joint deterministic and statistical approach to topological data analysis (TDA) should be pursued with a challenge of how to use topology to extract features from the data and how to design effective visualizations to communicate these features to Defence analysts. The research is also required to show the relevance and stability (under perturbation or noise) of topological and geometric information.

The overall challenge is to transfer and evolve the pure mathematical concepts of topology to analyse and gain improved understanding of high-dimensional maritime activity. Machine/deep learning should form an integral component of this task, exploiting the information from topological data analysis.

Approach

Recognising the emergence of topological concepts to reduce dimensionality and achieve structural invariances in time-varying data sets, we seek to gain an improved understanding (at various scales) of high-dimensional, maritime-domain awareness and assessment through advanced topological space representation and topological data analysis methods and tools. Specific focus should be directed to persistence homology [1] (computing consistent topological features of a space at different spatial resolutions) and connections to scalable machine/deep learning over multi-variate data/information [2].

After a start-up discussion with Dstl (at which mutual understanding will be achieved and the Defence maritime domain challenge scoped and detailed) the project lead/s shall define, agree and commit to the topological data analysis challenge(s) to be addressed in the work. Novel research will be undertaken in the first year to advance topological analysis (with the Defence constraints in mind). This shall explicitly draw on state of the art research from academia. The undertaken research will be theoretically, rather than empirically driven, with selective validation undertaken on suitable datasets. In undertaking this approach we seek to achieve leaps of advance through new concepts, rather than incremental improvement through minor, extant algorithm modification. Opportunities for publication at leading conferences or in journals should be exploited to ensure external peer review of the undertaken research. The last six months of the research should focus on the implementation of theoretical achievements and its clear demonstration to Defence stakeholders. Increased liaison with Dstl will be required in the last six months to agree the demonstration-related provisions and organise the Defence component of the demonstration (e.g. stakeholder invitations). The demonstration should be undertaken at the Dstl Porton Down site at a date of mutual convenience during February/March 2021.

ANNEX B

Personal Particulars - Research Workers

Purpose

Completion of this form is required in order for Dstl to complete the relevant Dstl and MOD administrative checks necessary to place a Contract with the Contractor.

Please complete this form in BLOCK LETTERS and return to the appropriate Dstl Commercial Department immediately, as there may be a delay while references are obtained for foreign students. Parts 1 & 2 are to be completed by the research worker and Part 3 by the contractor/research body/academic institution administrator.

Part 1 – Contract Details

Contract number (incl. Sub-contract nos. where applicable):	
Name of contractor/research body/academic institution: Postal address:	
Title of project:	
Project start date:	Project finish date:
Name and position of lead researcher or manager of project:	

Part 2 – Personal Details of Research Worker

Forename(s):	Surname:
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Have you used any other surname, e.g. marriage, maiden name, change by deed poll?	
If 'Yes' please provide details below:	
Previous Surname:	Month/Year of Surname Change:
Date of Birth:	Nationality:
Current Address:	
Month/Year moved in to current address:	
If you moved in to your current address less than 12 weeks ago please provide full postal address(es) to cover the 12 week period; include the month/year that you moved in/out:	
Previous Address:	
Month/Year moved in to previous address:	
Month/Year moved out of previous address:	
Mobile Phone Number:	
Academic Qualifications: State class of honours, University and date of conferment (where applicable):	
Particulars of Experience: Give the nature of duties and posts held, with dates.	
I confirm that the information I have given in Parts 1 and 2 of this form are accurate to the best of my knowledge and belief.	

Signature:	
Name (in full):	Date:

Action

When complete please take this form and a copy of your CV to the University Administration Office/Employer's Human Resources Officer, or similar, for completion of Part 3. Non-UK nationals will also need to take their passport or identity card so that a certified true copy can be taken and included with this form.

Part 3 Confirmation of Immigration Status

Is the research worker/student a UK National?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If Yes no further action is required and the form is to be signed and returned to the address below. If No please complete the all fields below.		
Passport <input type="checkbox"/> Identity Card <input type="checkbox"/> ✓ to indicate which document*	Number:	
A copy of the above referenced identity document must be attached to this form, signed, dated and certified as a true copy by the University Administrator/Employer's Human Resources Officer or similar. The copy is to include all passport pages containing visas and entry/exit border control stamps and the entire identity page (including the chevrons). Please ✓ <input type="checkbox"/> to confirm copy attached.		

The research worker/student detailed above is (✓ to indicate which statement applies):

- from the European Economic Area or Switzerland and is therefore able to study in the UK without any restrictions.
- from outside the European Economic Area or Switzerland and has the appropriate immigration status (in accordance with the requirements of the [UK Border Agency](#)) to study in the UK at the academic institute detailed in Part 1 above.

I confirm that the information I have given in Part 3 of this form is accurate to the best of my knowledge and belief.

Name (printed):		Date:	
Signature:		Position:	

Action

When complete return this form and attachments to:

[Click here to enter text.](#)

Or scan form to include signatures and email (with attachments) to:

[Click here to enter text.](#)