

**Turing Defence and Security Programme**

**Call for research proposals – short projects –  
behavioural analytics, digital identification**

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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 short 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.

**The short projects should be ~6 months long, start around October 2018, and finish by 28 March 2019.**

The challenges from the programme under which this call is placed are social data science and privacy and trust - specifically digital identity assurance and data synthesis.

Collaborators from other universities and industry are also encouraged to participate in projects led by Turing researchers.

Further information on the programme challenges and goals, existing programme projects, can be found online at <https://www.turing.ac.uk/research/research-programmes/defence-and-security>

## Funding available

A total of £150k will be available, to be awarded for two or three projects. These should be short pilot/pump-priming projects, which can begin in **October 2018** and will **finish** and have reports submitted by **28 March 2019**.

These awards may act as a “stage gate”, with the potential for larger amounts of follow on funding available in 2019-2020 for projects which have deliverables with potential for high impact and benefits.

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 (up to 80% fec). More information on eligible costs is available [below](#). Please consult with your institution for guidance as to typical cost estimates to prepare your application.

## Research challenges

This call is seeking proposals for projects that apply techniques within the field of data science applied to **digital identity assurance** and **data synthesis**.

It is not expected that proposals address any more than one of the areas below (i.e. one bullet point).

### Digital identity assurance

The UK Government has a mandate to protect its citizens at home and abroad; this includes aspects of their privacy and security as consumers of digital services.

The topics of interest for this research call are:

- How can data science help to provide greater assurance of identity during online interactions without compromising the anonymity of participants?
  - What are the ways of spotting anomalies within homogeneous populations? (i.e. spotting an adult on a teenage group chat) – Can you spot “illegitimate” efforts to assimilate within a group?
  - What techniques (and indicators in data) can be used to provide an assurance of identity? How normal are “normal” people within a given subgroup? How can we quantitatively contrast natural entropy with anomalies?
- There are scenarios in which people may wish to legitimately obfuscate their identity but remain digitally active – witness protection, child-protection and relocation, armed forces serving overseas. In such cases, there may be

a need to protect digital users from discovery that could directly impact their safety. Are there data-driven approaches to:

- determining whether an online profile is receiving “unusual” attention? For example, how many of someone’s “Facebook friends” are genuine friends or connections?
- determining whether a profile has been cloned or taken over by another user?

## Data synthesis

The sensitive nature of personal data makes sharing notoriously difficult for governments (and indeed many other types of industry) to do effectively. Often, proxy datasets are sought (which is not ideal) or datasets are anonymised to the point where any interesting features have been obfuscated.

- What methods exist for generating representative data that carries the same data characteristics as the training data, yet carries none of the same identifying features? Is it possible to synthesise data characteristics to yield translational findings to the original data?
- How does this extend to synthesising human behaviour (i.e. synthesising events around a particular narrative)? How effectively can we generate activity logs, location or social trajectories?

## APPLICATION PROCESS

We encourage pre-submission discussion on scientific direction of your proposal with the Programme Director, Mark Briers, [dsprogramme@turing.ac.uk](mailto:dsprogramme@turing.ac.uk) (and Programme Visiting Researcher Ben Tagger, [btagger@turing.ac.uk](mailto:btagger@turing.ac.uk), after mid-August)

Any queries regarding process, post-award requirements, costing or general eligibility should be discussed with the Programme Manager, Catherine Lawrence, and/or Research Administrator, Charlie Thomas (also on [dsprogramme@turing.ac.uk](mailto: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
- Programme Director and Programme Manager check eligibility and allocate to panel for review
- The Review Panel is comprised of the Programme Director plus a subset of members of the independent Programme Board. Additional expertise from other academics from the Turing partner universities may be called upon to provide a review if required.
- Each application reviewed by at least two members of the Review Panel, and reviews returned to the Programme Manager for collation

- Review Panel meets (in person or via teleconference) to discuss all applications and reviews, then select awardees. The Programme Director and Programme Manager or Research Administrator must be in attendance.
- Recommendation regarding projects to be awarded sent to Programme Board for ratification
- Applicants notified of outcome by Programme 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 Programme Manager or Research Administrator via [dsprogramme@turing.ac.uk](mailto:dsprogramme@turing.ac.uk)

**By 28 August 2018 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:
  - *Description: include a description of the scientific problem being tackled. Where the research has application potential, also include a description of the problem facing defence & security / other application domains / consumers / society / etc.*
  - *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 is Turing 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 challenges above (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) *(We understand it may not be possible to obtain such letters of confirmation prior to the deadline due to the short timeframe and summer vacations, and will accept these after the deadline if necessary. Please note, no award can be made prior to receipt of such letter.)*

Eligible costs include:

- salary and overheads (not doctoral students) on FTE basis of personnel working on directly on the project – this could include, for example, PIs, postdocs, research associates, data scientists or software engineers. We can provide funding at 80% f.e.c 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

### **Please note**

We appreciate that, due to the short nature of these projects and the required end date, your project is likely to need to be staffed by existing resource or reallocation of existing resource (e.g. postdoc, from a researcher pool, research software engineers/data scientists, a PhD student who has just finished and can work with you another 6 months, etc). It is highly unlikely that recruitment of new resource can be achieved within the timeframe required for project outputs. Future calls for short projects will be issued with a longer lead time to avoid this risk.

## **Assessment**

Proposals will be assessed based on the following criteria:

- Research excellence, including:
  - Innovation and originality
  - Technical diversity/interdisciplinarity
  - Clarity of project plan
  - Fit to Programme remit<sup>1</sup>
  - Fit to call for proposals theme areas
  - Clarity of desired outputs, impacts and relevance to the Programme and Turing Strategy
  - Clarity of plan for ethical oversight (if applicable)

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<sup>1</sup> See <https://www.turing.ac.uk/research/research-programmes/defence-and-security>

- Appropriately experienced and qualified research team
- Impact
  - Potential for pathways to deliver operational impact
  - Potential for further development/adoption by academia and/or industry
  - Potential for pathways to impact that address the programme's focus
  - Internationally leading scientific excellence
  - Involvement of collaborators beyond current Turing community
- Value for money
  - Leverage brought to the Programme by the proposed project (including in-kind contributions, external funding, industry contacts, use-case partners with data, etc.)
  - Reasonable and fully justified costs

Please note that all proposals will be assessed and graded on the basis of these criteria first and foremost; however, the selection process may also take into account factors which ensure a diverse and well-balanced portfolio of projects in the programme and at the Turing.

## POST-AWARD INFORMATION

### Project meetings

Successful applicants will be expected to attend a kick-off meeting, an interim progress meeting, and a project close meeting, with Technical Partner from the D&S programme funder. These may take place at the Turing, at GCHQ, or at the project lead's university.

### 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 a 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.

### Outputs required

We require that projects will produce the following:

- If applicable, the application to and approval from the relevant research ethics committee.
- A review of the relevant literature and technologies around the investigation area (this need not be a full literature review; but could be in the form of a report, blog posts/articles, or demonstration of exploratory experimentation e.g. Jupyter notebook)

- A short interim progress report at the half way point, describing progress and expectation (in the style of a blog post)
- A final technical report and review of the findings of the project – in the form of a formal written report, or a submitted journal/conference publication (preferred)
- Submission of any software/technologies developed (if applicable, via online repository i.e. Github etc, or CD/USB)
- A presentation of the project findings to members of the D&S programme.

All applicable outputs **must** be submitted to the Turing by **Thursday 28 March 2019**.

## 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 are 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	6 August 2018
<b>Q&amp;A sessions</b>	<b>15 August 2018, 14:30-17:30 (TBC)</b>
Deadline to submit	16:00 on Tuesday 28 August 2018
Eligibility checking, resubmission requests	28 – 30 August
Review and selection of proposals	Early-mid September 2018
Award offers and acceptance of terms	Mid-late September 2018
Projects start	From 1 October 2018
Projects to complete and report by	28 March 2019 at the latest

## Queries

For general queries about eligibility or administrative aspects, contact Catherine Lawrence.

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 **15 August** between 14:30 and 17:30.

Representatives will be available for 25-minute appointments. To book your slot, please complete the form here: <https://doodle.com/poll/papdpdppudkywvaa> 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 15 August, please email [dsprogramme@turing.ac.uk](mailto:dsprogramme@turing.ac.uk) and we will try to book you a time on another day.

## CONTACT

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Mark Briers, Programme Director

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