

AI SINGAPORE RESEARCH PROGRAMME PROPOSAL APPLICATION FORM

All information is treated in confidence. The information is furnished to AI Singapore with the understanding that it shall be used or disclosed for evaluation, reference and reporting purposes.

SECTION 1: Cover Page (All fields are mandatory)

To be input via the portal fields and a PDF version will be generated.

Proposal Title: XX (Bold, Font 11)		
Grand Total Cost (Direct + Indirect Research ¹): S\$ XX	Period of Support: XX years	Host Institution (please indicate only one host): XX
Vision of the Proposal Discriminating Information		
Research Topics of the Proposal (Select the proposal's chosen research topic(s) to enable the vision. See Annex D for descriptions): <input type="checkbox"/> Information authentication, bias, benchmarks, and evaluation <input type="checkbox"/> Interpretation and generation <input type="checkbox"/> Assessment of impact and user profiling		

Classification of AI Core Technical Areas of the Proposal (select a maximum of 3 only):	
<input type="checkbox"/> Cognitive modelling and systems	<input type="checkbox"/> Natural language processing (NLP)
<input type="checkbox"/> Game theory and economic paradigms	<input type="checkbox"/> Planning and scheduling
<input type="checkbox"/> Heuristic search and optimization	<input type="checkbox"/> Reasoning under uncertainty
<input type="checkbox"/> Knowledge representation and reasoning	<input type="checkbox"/> Robotics
<input type="checkbox"/> Machine learning	<input type="checkbox"/> Search and constraint satisfaction
<input type="checkbox"/> Multiagent systems	<input type="checkbox"/> Vision

¹ Singapore-based Institutes of Higher Learning and/or Research Institutions selected to host AI Singapore Research Programme projects will be eligible for indirect research cost (IRC) funding of up to 30% of the direct cost approved under the AI Singapore Research Programme.

Project Team Members <i>(Please add/delete rows where necessary)</i>						
Role	Name	Google Scholar or DBLP iD²	Designation	Department/ Institution	% effort within project³	% of time committed on the project⁴
<i>PI</i>						
<i>Co-PI (1)</i>						
<i>Collaborator (1)</i>						
				Total:		

² The Google Scholar or DBLP identifier is an alphanumeric code to uniquely identify scientific and other academic authors and contributors. (refer to <https://dblp.uni-trier.de/>)

³ Represent % effort spent by the researcher in the project relative to his/her other team members. **The total must add up to 100%.**

⁴ Represent % effort spent by the researcher in the project relative to his/her other job scope. Note that the PI is expected to commit **at least 20%** of his/her time and the Co-PI **at least 10%** of his/her time to this project.

SECTION 2: Details of Research Proposal

To be uploaded as a separate PDF to the portal.

Please ensure all fields are completed. Proposal contents should not exceed **12 pages**. All diagrams, tables and figures that illustrate the explanation of the proposal approach should be within the 12-pages limit. All citation references and Gantt chart should be attached as appendices (excluded from the page limit). **Please use Arial font size 11, single line spacing and default margins of this document.**

- A. Executive Summary:** *400 to 500 words of executive summary on the proposed project (approximately one-page, included in the page limit), written in layman terms and avoiding scientific jargons, where practicable. The headers and descriptions in executive summary should align with Research Proposal, where practicable.*
- B. Research Objectives:** *This section should articulate clearly the use-inspired objectives and expected outcomes of the project. Additionally, you must share a striking vision of the major foreseen downstream benefits of this project on society. This could be achieved through directly enabling new high-impact technologies and capabilities, or through creating the opportunity for subsequent projects to do so. This must be compelling and easily understandable to people outside the field, without use of technical jargon.*
- C. State of Current Research:** *How is it done today, who are the leading researchers studying the targeted problem/objectives, and what are the limitations of their current approaches?*
- D. Proposed Approach:** *What is your approach? Please provide a detailed technical description of your suggested approach. Additionally, include details of previous and ongoing works, and any preliminary results from pilot studies to demonstrate the feasibility of the research approach. Conduct a competitive scan of existing state-of-the-art developments and compare your proposed solution in quantitative terms. Why do you think your proposal will be successful in addressing the problem?*
- E. Project Plan:** *How are financial and human resources organised to accomplish the objective? How coherently do the sub-projects contribute and synergise towards achieving the research objectives? What are the technical risks and how would these be mitigated? Outline the schedule for all phases of the proposed programme – a Gantt chart has been provided in Annex A.*
- F. Role of team members and Detailed Management Plan:** *What are the roles and contributions of the Co-PIs and Collaborators? Describe the collaboration and integration plan, detailing how various work plans will interact among the team member(s) and Collaborator(s) in achieving the research objectives. What are the track records and capabilities of the PI and Co-PIs and how are their expertise relevant to the research proposed approach? How are the Collaborator(s) augmentative and relevant to the research approach?*
- G. Outcomes & Deliverables:** *Define the success criteria (quantitative or qualitative) for the suggested research approach. Explain what impact the success of the project would be for the economy and/or society, and how it would generate value globally or for Singapore in the field of advancing AI fundamentals.*
- H. Ethics Statement (maximum 1 page, excluded from the 12-page limit):** *Proposal submissions are expected to include a statement of the potential negative ethical/societal impacts of the proposed research. Submissions should also provide description on how these risks can be mitigated, if identified, and should not contain information that should otherwise be in the main proposal.*

SECTION 3: Proposed Budget

Section 3.1: To be input via the portal fields and a PDF version will be generated.

Section 3.2 and 3.3: To be uploaded as a separate Excel and supporting documents within the Excel Tab under “Supporting Doc” tab

3.1 Requested Budget Across Institutions

Institution	Name of Institution	Requested Budget (inclusive of IRC)	% of the Total Requested Budget Grant
Host Institution			
Partner Institution 1			
Partner Institution 2			
Partner Institution 3			
Total			100.0%

3.2 Pls should fill in the detailed budget breakdown in this section of the Excel form, broken down into the categories and sub-categories, mainly:

- i. Expenditure of Manpower (EOM);
- ii. Expenditure on New Equipment (EQP);
- iii. Other Operating Expenses (OOE), with sub-categories for local conferences/ working visits/ meetings, materials and consumables (including animal costs if any), virtual conferences and miscellaneous costs or others; and
- iv. Overseas Travel (OT), including overseas physical conferences/ working visits/ meetings.

3.3 Any additional information (e.g., equipment quotations, OOE details, etc.) should be provided within the Excel tab. Further line item breakdown is required in sub-section of the application Excel form. **Specifically, a detailed justification for the compute resources is expected to articulate the needs for the proposed research directions.**

SECTION 4: Declaration of Other Funding Support

To be uploaded as a separate PDF to the portal.

4.1 All Grants Currently Held or Being Applied

Please provide details (all fields are mandatory) for all currently held or applied grants by the PI and all Co-PIs listed on the cover page (not required for Collaborators). These include those **supported by and/or applied** to universities, other public funding agencies and foundations. Please indicate "N.A." for any PI/Co-PI with currently no awarded grants or grants being applied for. Note that all PI and Co-PIs must be accounted for under this section.

S/ N	Title of Supported Project	Funding Agency	Status (Awarded / Applied)	Total Amount Awarded/ Applied for (\$)	Years of Support	Grant End Date (dd/mm/yyyy)	Granted to Who

If any of the currently held grants above fund research topics related to the AI Singapore proposal, please include a **one-page supplementary write-up as an annex** (Template found in [Annex C](#)). The one-page supplementary write-up is to describe the research funded by these grants, and how the objective and research differ from that in the AI Singapore proposal.

4.1 All Other Funding Support

Please provide details on the funding or other resources to be provided by any participating industry/institute partner(s) for the applied grant.

Type of Funding (please indicate In-Kind or Cash)	Funding Organisation	Duration of Support (No. of Years)	Expiry Date (dd/mm/yyyy)	Funding Amount (\$)
<i>Please add or delete rows, where necessary</i>				
Total Amount:				

SECTION 5: Performance Indicators

To be uploaded as a separate PDF to the portal.

Key Performance Indicators		Target number to be Achieved at the end of Project	List the Conferences and Journals for submission of papers
1.	No. of Top 10% Publications <i>(Total number of journal papers and conference papers/presentations published)</i>		<i>(e.g. AAAI, NeurIPS)</i>
2.	Any other indicative key performance indicators		<i>Not applicable</i>

SECTION 6: Names of Suggested International Reviewers

To be input via the portal fields and a PDF version will be generated.

PIs must nominate **at least three (3)** international peer reviewers.

Reviewers should be **active AI experts** in the field who are able to provide an independent and credible assessment of the research proposal.

- In general, reviewers should be at least Assistant Professors or equivalent. Doctoral students should not be nominated as reviewers.
- PI should suggest names of people whom are likely to serve as reviewers.
- Nominees, who have moved to other research fields or have moved into administration and left research altogether are not good candidates.
- Additionally, very senior figures in the field are not good candidates due to high volume of duties and obligations.

PIs should disclose their relationship and past collaborations with the reviewers, if any.

The Scientific Evaluation Committee may choose not to engage the suggested reviewers.

S/N	Name of Reviewer	Institution	Designation	E-mail address	Research interest / Expertise	Relationship to PI/Co-PI
1						
2						
3						

Section 7: Declaration by Grant Applicants

To be uploaded as a separate PDF to the portal.

In signing this grant application, the PI and Co-PI(s) UNDERTAKE, on any grant award to:

- ensure that all PI and Co-PI(s) meet the listed eligibility criteria;
- ensure that a proposal with similar research aims has not been sent for and/or awarded research funding either by AI Singapore, NRF or another funding agency;
- be actively engaged in the execution of the research;
- ensure that AI Singapore and NRF are acknowledged in all publications and/or research outcomes;
- ensure that a copy of all publications arising from research wholly or partly funded from this Scheme will be submitted to AI Singapore;
- comply with the provisions of any relevant laws of the republic of Singapore, statutes, regulations, by-laws, rules, guidelines and requirements applicable to it, as well as all applicable policies and procedures adopted by AI Singapore and/or NRF as the same may be amended or varied from time to time; and
- agree to hold primary responsibility for the responsible conduct of research, and shall abide and comply with the ethical, legal and professional standards relevant to research, in accordance to the research integrity policy of the Host Institution.

We declare that the facts stated in this application and the accompanying information are true. This is an original and latest version of the proposal. We also declare that no other versions of this proposal (or parts thereof) with similar objectives, scope, deliverables or outcomes have been or will be submitted to any other funding bodies.

Name of Applicant	Signature	Date Signed
Principal Investigator <Name of Applicant>		
Co-Principal Investigator (1) <Name of Applicant>		
Co-Principal Investigator (2) <Name of Applicant>		
Co-Principal Investigator (3) <Name of Applicant>		
Co-Principal Investigator (4) <Name of Applicant>		

Please add rows if necessary.

Section 8: Endorsement by the Host Institution

To be uploaded as a separate PDF to the portal.

In signing the grant application, the Host University UNDERTAKES, on any grant award, to:

- ensure that the Principal Investigator (PI) meets the defined eligibility criteria;
- provide appropriate support during the grant period;
- ensure that the funds provided are used for the appropriate purposes and managed according to the terms and conditions stipulated in the Letter of Award; and
- ensure that all budget requests are in accordance with the IHL/RI's prevailing policies and financial guidelines.

Proposal Title

Lead PI

(Capitalised FAMILY NAME)

Comments:

Name and Signature of Director of Research (or equivalent) / Date

ANNEX: Checklist

To be uploaded as a separate PDF to the portal.

Please attach the following annexes in pdf format, under *Research Proposal* Appendices section:

Item	Remarks	Description
Annex A	Mandatory for all applications	A project implementation schedule to outline the plans for the proposal. All citation references and Gantt chart should be attached here.
Annex B	Mandatory for all applications	Copies of all applicants' CVs in the proposed format. Letters of Commitment: letters from all collaborators (if any) to state their role and contribution to the research.
Annex C	Mandatory if the AISG Research Grant 2024 application is related to currently held grant(s).	Describe the research funded by currently held grant(s), and how the objective and research differ from that in the CRP application. Refer to Section 4: Declaration of Other Funding Support

ANNEX A: Project Implementation Schedule

The proposed schedule will be used for assessment and evaluation of the project. A satisfactory progress is required for continued disbursements of funds and will also be taken into consideration for future AI Singapore grant application and for grant renewal. Projects are expected to commence operation no later than two months from the start date of the project.

Quarters	Year 1				Year 2				Year 3				Year 4				Year 5			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Project Implementation Schedule																				

ANNEX B: Curriculum Vitae

Please note the eligibility requirements:

1. PIs and Co-PIs from publicly-funded Institutes of Higher Learning (IHLs)⁵ and Research Institutions (RIs)⁶ in Singapore are eligible to participate in the call. Private sector and other entities can participate as Collaborators.
 - a) PI must fulfil the following requirements:
 - Hold a primary appointment (i.e. a minimum time commitment of 9 months per year in Singapore) in a Singapore-based Institute of Higher Learning (IHLs) and/or Singapore-based Research Institute;
 - Must be an expert in AI domain; an AI expert is defined as a person with strong track record of publications from AI conferences and journals; and
 - Be an independent PI with a track record of leadership ability in coordinating research programme(s) and providing mentorship to research team(s), as well as having productive research outcomes.
 - b) Co-PI must fulfil the following requirements:
 - Hold a primary appointment in Singapore-based Institute of Higher Learning (IHLs) or Research Institution (RI).
2. The CVs of all members (**PI, all Co-PIs and Collaborators**) listed on the cover page must be provided according to the format below. **Each CV should start on a fresh page and be limited to 2 pages.** Please indicate “N.A.” beside the label field if the required information is not applicable and note that AI Singapore will not be responsible for any missing information not provided in the CVs.
 - Name
 - Title
 - Office mailing address
 - Email
 - Contact number
 - Current position (please provide full details, e.g. primary appointment, joint appointments; other academic appointments including those outside of Singapore; percentage of time spent in Singapore every year, if applicable)
 - Employment history
 - Academic qualifications (indicate institution’s name and year degree awarded)
 - Research interests
 - List of 5 most significant publications (in the past 3 years only, i.e. 2021 - 2024) relevant to the proposal
 - Patents held (related or unrelated to the study)
 - Scientific awards

⁵ *Institutes of Higher Learning (IHLs)*: National University of Singapore (NUS), Nanyang Technological University (NTU), Singapore Management University (SMU), Singapore University of Technology and Design (SUTD), Singapore Institute of Technology (SIT), Singapore University of Social Sciences (SUSS).

⁶ *Research Institutions (RIs)*: A*STAR Research Institutes/Centres/Consortia; CREATE Research Entities.

ANNEX C: Declaration of Other Funding Support Supplementary

Please note the eligibility requirements:

PI and Co-PIs should note that **parallel submissions are not allowed** – i.e. applicants must never send similar versions or part(s) of the current proposal application to other agencies or grants for funding (or vice versa).

S/N	The serial number should correspond with the proposal declared in Section 4
Title of Supported Project	
Funding Agency	
Status	
Total Amount Awarded/ Applied for (S\$)	
Years of Support	
Grant End Date (dd/mm/yyyy)	
Granted to Who	
Description	It should cover: <ul style="list-style-type: none"> (i) Description of the research funded by other awarded/applied grant. (ii) How the objective and research differ from the proposal submitting to AI Singapore.

D: Descriptions of Proposal Vision and Enabling Research Topics

Discriminating Information

Advances in technology have enabled the rapid creation and dissemination of information, for instance, via social media. This ability to quickly reach mass audiences has the potential to impact individuals and society as a whole, sometimes adversely, should misinformation or disinformation be spread. For instance, in the recent COVID-19 pandemic, misinformation about the disease, potential treatments and vaccines could have resulted in adverse impact on the health of individuals or even the population in general. As another example, deepfakes could be used for manipulation, or even cause harm, when widely disseminated. AI systems can potentially help in detecting such misinformation/disinformation and assessing its impact on individuals and society, and the focus of this theme is to develop novel methods towards these goals.

Enabling research topic	Description
Information authentication, bias, benchmarks, and evaluation	<p>Defining disinformation: Whether a piece of communication is disinformation or not largely depends on the intention of the creator. How then can disinformation be appropriately defined for developing an AI system to discriminate it?</p> <p>Multimodality/Multilinguality: How can we leverage multimodal features in media for better detection, monitoring and prevention of misinformation? How can we develop systems that can handle multiple languages?</p> <p>Role of external knowledge: What is the role of external knowledge, and how can we best utilise it?</p> <p>Detection vs. prevention: How can AI be used not only for detection of misinformation but also for prevention of misinformation, such as through educating the general public?</p> <p>Use cases: The concrete, real-world use cases and benchmarks are urgently needed to drive the research.</p> <p>Evaluation against dynamically changing information: How can AI methods handle the uncertainty of ground truth that often comes with unverified information, since the ground truth may dynamically change when the event unfolds and new information keeps coming in?</p>
Interpretation and generation	<p>Robustness of detection systems: There are attacks designed to evade misinformation/deepfake detection systems. For example, there are many possible deepfake synthesis systems and it is not feasible to collect data from all of these. So, building in robustness and fast adaptation of systems to new attacks would help mitigate spread of such harmful information.</p> <p>Interpretability/explainability of detection systems: Can these systems identify specific features of the input (e.g., pixels in images or words in news text) that contain artifacts suggesting that the input has been manipulated? For example, for deepfake, this may involve identifying the pipeline of manipulations used to generate the deepfake. This would both aid detection algorithms and facilitate human-AI collaboration to better identify misinformation/deepfakes.</p> <p>Source attribution: How can we design methods to identify which entity has generated the misinformation/deepfake? For misinformation propagated through online social networks, this may involve analysis of</p>

	<p>the propagation patterns in the social network graphs. Content Provenance and Authenticity.</p>
<p>Assessment of impact and user profiling</p>	<p>Early detection: To reduce the impact of the spread of misinformation, developing early detection methods is critical.</p> <p>Impact quantification: How to quantify the impact of mis/disinformation?</p> <p>Understanding of vulnerability: What makes someone vulnerable to misinformation? This may require an interdisciplinary approach with people from communication and computer science working together.</p> <p>Understanding of behaviours: For some malicious misinformation such as scams, the scammers perform a series of actions to deceive users. Understanding such scammer behaviours is important for detection and prevention.</p>