



## 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 *(to be completed on portal)*

Proposal Title: <b>XX (Bold, Font 11)</b>		
Budget Requested <i>(Excluding Indirect Costs<sup>1</sup>)</i> : S\$ <b>XX</b>	Period of Support: <b>XX</b> years	Host Institution <i>(please indicate only one host)</i> : <b>XX</b>
Keywords <i>(please provide 6 to 8 keywords in AI terms)</i> : <b>XX</b>		

Project Team Members <i>(Please add/delete rows where necessary)</i>						
Role	Name	Google Scholar or DBLP id <sup>2</sup>	Designation	Department/Institution	% effort within project <sup>3</sup>	% of time committed on the project <sup>4</sup>
<i>PI</i>						
<i>Co-PI (1)</i>						
<i>Co-PI (2)</i>						
<i>Co-PI (3)</i>						
<i>Co-PI (4)</i>						
<i>Collaborator (1)</i>						
<i>Collaborator (2)</i>						
<i>Collaborator (3)</i>						
				<b>Total:</b>		

<sup>1</sup> 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 20% of the direct cost approved under the AI Singapore Research Programme.

<sup>2</sup> 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/>)

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

<sup>4</sup> 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.



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## **SECTION 2: Details of Research Proposal** *(to be uploaded as attachment)*

Please ensure all fields are completed. Proposal contents should not exceed **10 pages**. Diagrams, 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 (approximately one-page will be excluded from the page limit) limit summary of the project proposed written in layman terms and avoiding scientific jargons, where practicable. The headers and descriptions in executive summary should aligned with Research Proposal, where practicable.*
- B. Research Objectives:** *This section should articulate clearly the use-inspired objectives and expected outcomes of the project and how it would contribute towards achieving the objectives of the AI Singapore Research Programme. Use neither jargon nor acronyms.*
- C. Description of Project:** *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? What is the potential for scientific breakthroughs or disruptive innovation arising from your approach? Please provide a competitive scan of existing state-of-the-art developments and compare your proposed technology/system/solution in quantitative terms. Describe previous and ongoing works, and any preliminary results, providing all necessary details that would help support this proposal. Why do you think your proposal will be successful in addressing the problem?*
- E. Program 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 to be provided as requirements in Section 5.*
- F. Role of team members:** *What are the roles and contributions of the Co-PIs and Collaborators? Briefly describe the plans for interaction 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 programme? How are the Collaborator(s) augmentative and relevant to the research programme?*
- G. Outcomes & Deliverables:** *What are the scientific milestones/ metrics that can be used to appropriately measure success at mid-term review and at completion of the programme against the stated research objectives? Be quantitative if possible (e.g.: a 2X improvement, or a specific achievement). Explain what impact the success of the project would be for the economy and/or society, and how it would generate value for Singapore in the field of AI technologies/capabilities.*



**SECTION 3: Declaration of Other Funding Support** *(to be completed on portal)*

**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. 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.

**2. 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>				
<b>Total Amount:</b>				

## **SECTION 4: Proposed Budget** *(to be completed on portal)*

Content in sub-section (A) should not exceed 1 page. The amount requested for each budget line item must be documented and justified in sub-section (B).

### **(A) Summary**

Budget Category	Budget(S\$)
Expenditure on Manpower (EOM)	
Expenditure on New Equipment	
Other Operating Expenses (OOE)	
Overseas Travel (OT)	
<b>Total Direct Costs (S\$):</b> <i>This figure must tally with the budget requested on the cover page.</i>	
<b>Indirect Research Costs (S\$):</b> <i>Singapore-based Institutes of Higher Learning, Research Institutions and/or publicly-funded Medical Institutions selected to host AI Singapore projects will be eligible for indirect research cost (IRC) funding of up to 20% of the direct cost approved.</i>	

### **(B) Detailed Breakdown & Justifications** *(Please add rows where necessary)*

#### **a) Expenditure on Manpower (EOM)**

*Projections should include salary/honorarium and costs of all other remunerative benefits (e.g. employer cpf, etc)*

Item No.	Description	Unit Rate per Man-Month (S\$/month)	#of Man-months (Month)	Sub-total (S\$)	Justification
EOM01	<i>Research Fellow 1</i>				
EOM02	<i>Research Fellow 2</i>				
EOM03	<i>Research Associate 1</i>				
EOM04	<i>Research Assistant 1</i>				
EOM05	<i>Student Intern 1</i>				
EOM06	<i>Please add or delete rows, where necessary</i>				
<b>EOM Total:</b>					

#### **b) Equipment**

*Please include GST, where applicable. Written quotations should be appended for equipment with value >\$100,000 requested. State whether similar equipment exists in the PI's/Co-PIs' labs or department/school. If so, justify why a new equipment is required for the project*



Item No.	Description of Equipment	Cost Per Unit (S\$)	# of Units	Sub-total (S\$)	Justification
EQP01					
EQP02					
EQP03					
EQP04					
EQP05	<i>Please add or delete rows, where necessary</i>				
<b>EQP Total:</b>					

**c) Other Operating Expenses (OOE)**

*Please include GST, where applicable.*

Item No.	Description of Expenses	Cost per Unit (S\$)	# of Units	Sub-total (S\$)	Justification
OOE01					
OOE02					
OOE03					
OOE04	<i>Please add or delete rows, where necessary</i>				
<b>OOE Total:</b>					

**d) Overseas Travel (OT)**

Item No.	Description of Trip	Cost per Trip (S\$/Trip)	# of Trips	Sub-total (S\$)	Justification
OT01					
OT02	<i>Please add or delete rows, where necessary</i>				
<b>Overseas Travel Total:</b>					

**SECTION 5: Activities and Performance Indicators** *(to be completed on portal)*

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.

A. Project Implementation Schedule (no more than 300 characters)	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4

Key Performance Indicators		Target to be Achieved at the end of Project (Please indicate N.A. if not applicable)
1.	<b>No. of Top 10% Publications</b> (Total number of journal papers and conference papers/presentations published)	
2.	<b>No. of Industry Projects</b> (The total number of research collaborations agreements, contract research agreements or consultancy agreements signed as a result of the project)	
3.	<b>Amount of Industry Co-funding</b> (The total cash co-funding received from private sector industry sources for the project and includes funds from non-private sector sources, such as, public agencies, grant agencies, or foundations. Excludes funds from RIE grants.)	

4.	<b>Amount of Industry R&amp;D Spending</b> <i>(The amount of R&amp;D investment a company commits to spend in Singapore as a result of the project. The R&amp;D investment can comprise in-cash and/or in-kind contributions. Please exclude commitments pledged to existing AI Singapore projects)</i>	
5.	<b>No. of Technologies Deployed</b> <i>(The number of research findings or technologies developed that are deployed (e.g. through a license or at least at pilot-scale) that will contribute to at least one of the following outcomes:  (i) Introduction of new product and/or service in the market; (ii) product or process improvement)</i>	
6.	<b>No. of Industry R&amp;D Jobs</b> <i>(The number of innovation positions induced in the ecosystem by public R&amp;D investments. In other words, this KPI counts the job roles/positions created by companies in the private sector and it is to be tracked based on RSEs and non-RSEs, as well as by the degree requirement specified by the companies for the jobs that they create.)</i>	
7.	<b>No. of Successful Start-ups</b> <i>(Successful start-ups defined as:  1) Received subsequent 3rd party financing, equal or greater than \$250K; or 2) Increased enterprise valuation by at least 20%; or 3) Crossed \$250K annual revenue)</i>	
8.	<b>No. of Manpower Spin-off to Industry</b> <i>(The number of RSEs involved in the project that went on to be employed by industry, or create a start-up)</i>	
9.	<b>Total Value-added from project including (S\$):</b> a. Projected Cost Savings/Revenue Generated b. Private Sector and/or Non-Private Sector Industry R&D Co-funding (in cash) c. Amount of Private and/or Non-private sector Industry R&D Spending (in cash and in-kind)	a. b. c.



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**SECTION 6: Names of Suggested International Reviewers** *(to be completed on portal)*

PIs must nominate at least 3 international peer reviewers. Reviewers should be **active** 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	Salutation	Name of Reviewer	Institution and Designation	Email Address	Research interest / Expertise	Relationship to PI/Co-PI <sup>5</sup>
1						
2						
3						

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<sup>5</sup> PIs/co-PIs should disclose their relationship and past collaborations with the international peer reviewers, if any.





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## **SECTION 7: Curriculum Vitae** *(to be uploaded as attachment)*

Please note the eligibility requirements:

1. PIs and Co-PIs from publicly-funded Institutes of Higher Learning (IHLs)<sup>6</sup> and/or Research Institutions (RIs)<sup>7</sup> in Singapore are eligible to participate in the call. Medical Institutions<sup>8</sup>, private sector and other entities can participate as Collaborators.
  - a) At the point of application, **PI** must fulfil the following requirements:
    - i. Hold a full-time appointment<sup>9</sup> in a Singapore-based Institute of Higher Learning (IHL) or A\*STAR Research Institute;
    - ii. Have the background/qualifications in AI knowledge;
    - iii. Be an independent researcher with a track record of leadership ability in coordinating research programmes and providing mentorships to research team, as well as having productive research outcomes; and
    - iv. No outstanding report(s) from other national grants.
  - b) At the point of application, **Co-PIs** must fulfil the following requirements:
    - i. Hold a full-time appointment<sup>10</sup> in a Singapore-based Institute of Higher Learning (IHL) or Research Institution (RI); and
    - ii. No outstanding report(s) from other national grants.
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

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<sup>6</sup> *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).

<sup>7</sup> *Research Institutions (RIs)*: A\*STAR Research Institutes, CREATE entities.

<sup>8</sup> Researchers from Medical Institutions in Singapore who hold at least 25% joint appointment in a Singapore-based Institute of Higher Learning (IHLs) and/or Research Institution (RI) may apply as PI or Co-PI. If awarded, the grant will be hosted in the IHL/RI.

<sup>9</sup> Defined as at least 9 months of service a year or 75% appointment.

<sup>10</sup> Defined as at least 9 months of service a year or 75% appointment.



Hosted by



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- List of 5 most significant publications (in the past 3 years only, i.e. 2015 - 2017) relevant to the proposal
  - Patents held (related or unrelated to the study)
  - Scientific awards
  - Number of staff (e.g. post-doctorates, research assistants, etc.) and PhD students currently in lab and source and duration/period of funding.



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## **Section 8: Declaration by Grant Applicants** *(to be uploaded as attachment)*

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

- 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.

<b>Name of Applicant</b>	<b>Signature</b>	<b>Date Signed</b>
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.*



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## **Section 9: Endorsement by the Host Institution** *(to be uploaded as attachment)*

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

- 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;
- ensure that all budget requests are in accordance with the IHL/A\*STAR's prevailing policies and financial guidelines.

Comments:

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