Singapore’s Ambition

VISION

By 2023, Singapore will be a leader in developing and deploying scalable, impactful AI solutions, in key sector of high value and relevance to our citizens and businesses

1. TRANSPORT AND LOGISTICS
2. SMART CITIES AND ESTATES
3. HEALTHCARE
4. EDUCATION
5. SAFETY AND SECURITY
About AI Singapore

Launched in Jun 2017

National R&D programme in AI – first of its kind national level setup

• build deep national capabilities in AI
• create social and economic impacts
• grow local talent
• accelerate AI ecosystem
• put Singapore on the world map
AISG’s Strategy

What major role should AI play in SG, and how can AISG facilitate it?

1) Grow AI talent pool

2) Demonstrate the value of AI through social and economic outcomes

3) Develop vibrant AI ecosystem for the nation
Mission:
Grow AI Talent Pool

Activities:
• AISG Research Grant Calls
• NRF AI Investigatorship
• AISG PhD Fellowships
• AI Apprenticeship Programme
• AI4x Series
Cutting Edge AI:
Targeted Capability Building
Governance & Ethics: Seeding Capabilities

01 Fairness
Ensure that the benefits of AI are properly shared among the community
- Bias detection & prevention

02 Accountability
Ensure that AI systems are properly regulated – minimizing risk and properly allocating losses
- Liability and compensation framework

03 Transparency/Explainability
Ensure that systems appropriately enable those affected to understand the process in general and a specific outcome in particular
- Transparency tools; explainability standards & measures

04 Ethics & Human-Centricity
Ensure that AI serves the interests of the broader community
- Values and trust in AI

05 Safety & Security
Ensure that AI systems are safe to use and appropriately protected against hacking and data breaches
- Safety certification
- Data protection & cybersecurity
NRF AI Investigatorship

• Building upon NRF Fellowship in AI

• Seeks to attract outstanding researchers at the mid or established career stage to lead groundbreaking, high-risk research in the field of AI in Singapore

• $3.25M grant over 5 years
AISG PhD Fellowship Programme

• Nurture and train local AI talents to perform advanced fundamental AI

• Aims to increase Singapore’s visibility and presence on AI fundamental research by publishing in top-tier AI conferences

• Allows participation in AISG initiatives such as 100E, AI Products, AI Grand Challenges

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AI Apprenticeship Programme

2 Months
Hybrid online & face-to-face mentoring
Well-directed learning
Start MVP Investigation and technology requirements

7 Months
MVM Development via multiple tracks with real-world AI projects
Real-world AI projects
$360,000 - $500,000

Certified AI Engineer
Back to Industry

Total number of Apprentices = 320

- Science (Chemistry, Physics, Maths, etc) & Arts (Econs) - 25%
- Engineering (ME, EE, EEE, etc) - 33%
- Computer Science / Computer Engineering / ICT - 20%
- Arts / Social Sciences / Others - 8%
- Accountancy / Banking / Finance / Business / Data Analytics - 14%
Generational AI Talent Development
Growing AI Literacy and Proficiency in the Singapore Ecosystem

Spin-off TTT partner (AI Learning Lab) recognized as PA and MOE-approved training provider

AI for Kids Grade 1-4 Courses + Storybook
Train and certify parent volunteers to equip schools to run AI enrichment classes for primary schools

AI Student Outreach Prog (2022)
Jointly funded with MOE to keep students' interest in STEM courses and STEM careers

AI for Students (Educator)
Educators access Datacamp python courses for FREE to support classroom learning

AI for Everyone (AI4E)
AI Primer Course (originally to attract companies to do 100E)

AI4I Intermediate course recognized as Credit-bearing modules

AI4I (Intermediate) – Foundations in AI
Recognized by 3 IHLs

AI4I (Beginner) – Literacy in AI
Follow up to AI4E

AI for Industry (AI4I) (Advanced) – Proficiency in AI
12month Prepare learners for AIAP

AI for Industry (AI4I) (Advanced)

AI Professionals Association for AIAP graduates and run CAIE qualifications

AI Apprenticeship Programme
Accelerated deep-skilling programme to train AI Engineers

Student Internship with 100E companies
Identify future AIAP

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Mission:
Demonstrate the value of AI through social and economic outcomes

Activities:
• AI Grand Challenges
• AI Prize Challenges
• 100Experiments
Challenge-based Approach

1. **AI Grand Challenges**
   - Using AI to solve *national-level* problems faced by Singapore

2. **Prize-based Challenges**
   - World-wide competitions to push state-of-the-art of AI technologies for *specific problems of regional relevance*

**Desired outcomes**

- ✓ Create significant economic and social impact with AI technologies
- ✓ Put Singapore on the AI world map with high-signature, high-impact projects
AI Grand Challenges
Inspiring, impactful and measurable R&D programmes to solve national problems

AI in Health
How can AI help tackle 3H diseases (Hyper-tension, Hyperlipidemia and Hyper-glycemia) in Singapore?

Robust AI
How can we make AI systems on autonomous vehicles more robust against adversarial attacks?

AI in Education
How can AI help enhance mother tongue language learning (Chinese, Malay and Tamil) in Singapore?
How can Artificial Intelligence (AI) help primary care teams stop or slow disease progression and complication development in 3H – Hyperglycemia (diabetes), Hypertension (high blood pressure) and Hyperlipidemia (high cholesterol) patients by 20% in 5 years?

AI in Health Grand Challenge

- Launched in 2018, 3 teams were selected for Stage 1, competing for Stage 2 ($20M).
- JARVIS was eventually selected for Stage 2 (2021-2024)

JARVIS

Lead-PI: Prof Wynne Hsu (NUS)
AI in Education GC

How can AI enhance the Mother Tongue Language (MTL) learning environment at home for Primary 1 & 2 students to increase oral proficiency by 20% after 2 years?

Goal

Enable realistic, engaging, coherent and meaningful short conversations between AI and student based on the Picture Description Task

Challenges

2. Natural language processing tailored for young children’s linguistic characteristics and local contexts.
Robust AI GC

How can we design robust CV systems for AVs that can recover at least 80% of their original accuracy after physical testing-time adversarial attacks?

• 3 teams were awarded $4M each from 2023 – 2026 to develop novel, real-world, adversarial attack against and defences for AI systems

• Team’s attacks and defences will red-teamed against each other, and also by DSO

• AISG and DSO will embark on real-world data collection to build test environments based on SG local environment
Prize Challenges
Competitions that put AISG on the global research and innovation world map

**Task:** Develop AI models to accurately predict if a given video is real or fake

**Supporting Partners:**

**Participation:** ~600 individuals (~470 teams) from over 45 countries, including top universities like MIT, ETH Zurich etc.

*More details can be found [here](#)*

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**Task:** Leveraging AI in FinTech to address real-world business needs:

**Supporting Partners:**

**Participation:** 150 submissions worldwide; 19 finalists showcased their solutions during Singapore FinTech Festival

*More details can be found [here](#)*
Real World Industry Projects Delivered

thru 100E + AIAP

IBM
SOMPO
GIC
HP
Q&M
100E Projects

END USER: ~ 50%

- Large Local Enterprises
  - Financial services
  - Electronics
  - Energy &...
  - Food...
- Financial services
- ICT and Media
- Others
- Precision...
- Education
- Healthcare
- Public Agency
- Logistics
- Start-up
  - Financial services
  - Healthcare

SOLUTION PROVIDER: ~ 50%

- Large Local Enterprises
  - Electronics
  - Marine &...
  - Others
  - Real Estate
- Financial services
- ICT and Media
- Others
- Precision...
- Environment...
- SME
  - Financial...
  - ICT and Media
  - Professional...
- Start-up
  - Electronics
  - Healthcare
  - ICT and Media
  - Logistics

117
73
>$60M

As of Nov 2023

END USER: ~ 50%
SOLUTION PROVIDER: ~ 50%

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SOLUTION PROVIDER: ~ 50%
Mission:
Develop vibrant AI ecosystem for the nation

Activities:
• International Partnerships
Making Singapore A Trusted AI Hub

Producers
- Talent

Customers
- Adopters

Partners
- International Collaborations & Partnerships

Governance & Standards
- Ethics & Regulations
- Chartered AI Engineers
- AI Readiness Index

Data
International Partnerships

AI for Net-Zero Energy Buildings
*Singapore-South Korea Joint Grant Call between AISG and IITP*

AI for Security and Fraud Prevention
*Singapore-Israel Joint Grant Call between AISG and MOST*
Thank You