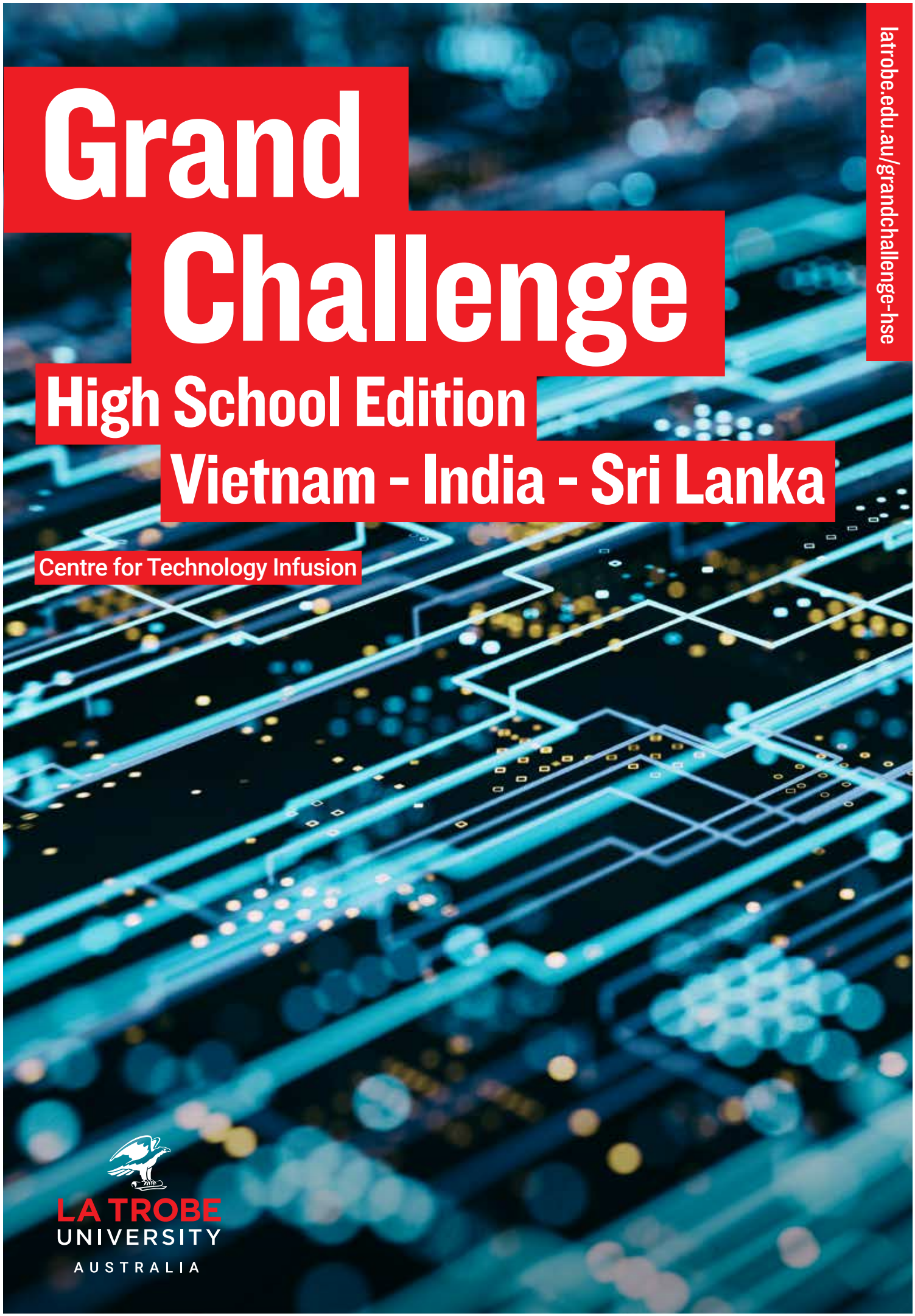
Grand
Challenge
High School Edition
Vietnam - India - Sri Lanka
Centre for Technology Infusion
latrobe.edu.au/grandchallenge-hse
LA TROBE
UNIVERSITY
AUSTRALIA

About the **Grand Challenge – High School Edition**

The Grand Challenge – High School Edition sets out to stimulate students to leverage new technologies and solve today's pressing problems. We are looking for bright high school students who have the insight, drive and tech ability to bring their innovations to life.

This competition is a collaboration between La Trobe's Centre for Technology Infusion, the La Trobe Innovation and Entrepreneurship Programs, the School of Computing, Engineering and Mathematical Sciences and the Business School.

Challenge Theme: Smart City Innovation

No region in the world is urbanising faster than Asia and Asian cities have their own unique challenges, which are different from European cities.

With urban growth also come challenges of economic growth, sustainability, efficiency and liveability.

This year we are inviting students to use technology to help solve their own city's challenges, representing any of the following themes:

- infrastructure and technology
- mobility and transport
- health and wellbeing
- cultural heritage
- energy, waste and water.

The competition is open to high school students between the ages of 16 and 19 undertaking their schooling in Vietnam, India or Sri Lanka.

How does the competition work?

High school students between the ages of 16 and 19 need to form teams of three to five people and register via the Grand Challenge website.

During the year, eligible teams work to validate and refine their concept. At the end of Phase 1, each team needs to submit a short report on the project. Students will be able to access guiding material online, and workshops will be organised by the Centre for Technology Infusion. By the end of Phase 2, teams need to upload a video presenting their smart solution. The videos will be assessed based on the validity of the problem being solved, originality and impact of the solution, market research and feasibility of the solution and the quality of the presentation.

Two winning teams will be selected: one representing South East Asia (Vietnam) and one representing South Asia (India or Sri Lanka). The winners will be decided by popular vote, together with the Grand Challenge panel of judges.

Supported by Victorian Government Trade and Investment, State Government of Victoria, Australia

STUDY MELBOURNE

* Registration opens 15 October 2022. A full set of the terms and conditions of the competition will be available with the registration form. La Trobe University reserves the right to change the terms and conditions at any time at its discretion.

WHAT WE ARE LOOKING FOR?

Participants must:

Demonstrate strategic insight.

Identify important issues faced by the community and develop smart, innovative solutions.

WHO CAN PARTICIPATE?

Teams must consist of a maximum of 5 students and preferably with gender diversity. Students must:

Be attending high school and aged between 16 and 19 years.

Have demonstrated technical, entrepreneurial, or leadership qualities in academic and/or extra-curricular activities.

Have approval from their Principal or Delegate to participate in this Challenge.

PRIZE

Two winning teams will be selected: one representing South East Asia (Vietnam) and one representing South Asia (India or Sri Lanka).

Each member of the winning teams will receive an iPad along with a certificate to commemorate their achievement in this internationally-recognised competition.

Certificates of Participation will be issued to all teams who have completed phase 1 and 2 of the competition.

FAQs and **proceedings**

Question	Answer
How can I participate?	Form a team of 3-5 peers and obtain a letter of support from your high school Principal or their Delegate. Register your interest via the Grand Challenge website and attach the letter to your registration form. You can check the eligibility criteria on the website. Visit the website for more information: **latrobe.edu.au/grandchallenge-hse**
Can you give me some examples of problems you think can be addressed?	Some Smart City cases studies for inspiration: • Remote physiotherapy provided by clinicians for patients diagnosed with Parkinson's disease via a remotely operated Smart Glove. This innovative solution was developed by the very first Grand Challenge High School Edition winners in 2022. • Sustainable antibacterial and antibiofilm activity of engineered biocatalytic nanocomposites targeting biofilm cells and matrix for water treatment membranes. This innovative solution was developed by the 2020-21 TIGC winners. • A smart navigation glove for motorcyclists embedded with Bluetooth technology connected to mobile phone navigation apps helps reduce road accidents caused by the use of mobile phones by motocyclists. This innovative solution was developed by the 2019–2020 TIGC winners. • A Korean City implemented smart water meters; today they double as a social health alert: family of people who haven't used water in two days, are sent an alert. • Melbourne can get hot in summer and its tree health sensors measure the water needs and CO2 conversion of the trees, helping the city council maintain the foliage that protects the city.
How can I win? **What are the judgement criteria?**	Validity of the problem being solved (30%) • How well is the problem defined and supported? • Have the risks and opportunities of the concept been identified and assessed? Originality and impact of the solution (30%) • How unique is the solution? • Impact: Is it an incremental improvement or transformative solution? Commercialisation potential of the solution (30%) • How thorough is the market analysis of similar solutions? • How feasible is the solution to implement in real life? Presentation Quality (10%)
What are the key dates and deadlines?	• **Sign up:** Registration will open on 15 October 2022 and close on 31 December 2022 • **End of Phase 1 project report submission:** February 2023 • **Submission of final project:** April 2023 • **Final event: (to be announced):** June 2023

For the full terms and conditions, please see:

latrobe.edu.au/grandchallenge-hse

Centre for Technology Infusion – La Trobe's **top tier R&D Centre**

The Centre for Technology Infusion (CTI) is an award winning R&D Centre based in the School of Computing, Engineering and Mathematical Sciences. The core of expertise of CTI is in the design and development of Sensor Systems, Micro Chips, Wired/Wireless Systems, System Integration and Complex Data Analytics.

Our clients come to us to apply new technologies to solve existing problems, which usually starts with a feasibility verification and can consequently result in prototype development, field trials, market ready development and integration with legacy systems.

Blue chip standards

CTI has established industry standard infrastructure to support research and technology development in these areas, including an ecosystem of the world's best delivery partners in Europe, South-East Asia and India.

De-risking investment

The Centre has a strong track record of delivering field-ready solutions thanks to its Proven Risk Elimination Methodology.

All our projects are in collaboration with industry and government partners and our teams are predominantly externally funded. In selected cases we even take equity in start-ups.

As a research and development centre we know that the creation of new products is a journey which can take unexpected turns. Our experienced teams can rapidly adapt to changes and challenges in product innovation cycles – always keeping an outcome oriented mindset.

CTI Awards 2017
From left to right: Scott McKenzie (CEO, SensaData P/L), Hon Philip Dalidakis (Former Minister for Trade and Investment / Innovation and the Digital Economy / Small Business), and Professor Aniruddha Desai (CTI Director, School of Computing, Engineering and Mathematical Sciences, La Trobe University).

Autonobus
Victoria's first autonomous shuttle bus at La Trobe University.

La Trobe **Innovation and Entrepreneurship Programs**

A new approach to cultivating innovation and entrepreneurship

La Trobe Entrepreneurship and Innovation Programs (LTI&E) launched in 2017 when La Trobe University won a $1mil grant to develop a regional accelerator program (known as the La Trobe Accelerator Program).

During the next 4 years, the program assisted 57 start-ups, over 1,350 small business during COVID-19 crisis, distributed over $300k grants and hosted over 500 events. The team was successful in winning the Australian Financial Review' Community Engagement award in 2018 due to its commitment to regional engagement. In 2020, LTI&E received a mention in Scott Morison's Letter to Bendigo for their Bendigo Invention and Innovation Festival (BIIF).

La Trobe Innovation and Entrepreneurship Programs embody the strengths and cultural qualities of La Trobe University. With a strong regional presence and industry partnerships, we create a high standard suite of programs that support the development of entrepreneurship in students, staff, alumni and start-up ecosystem.

La Trobe Innovation and Entrepreneurship's mission is to develop entrepreneurship through three main objectives:

- Access to global markets through the Global Markets Accelerator Program
- Creation of a talent pool by creating opportunities for students to work in small entrepreneur teams and businesses
- Develop and support entrepreneurs in regional Victoria.

La Trobe **School of Computing, Engineering and Mathematical Sciences**

The School of Computing, Engineering and Mathematical Sciences (SCEMS) provides an integrated network of high-level research expertise across engineering, computing sciences and the mathematical sciences.

SCEMS contains active research groups in:

- manufacturing
- civil, electronic and electrical engineering
- signal processing
- sensors
- internet of things
- artificial intelligence and image processing
- information systems
- virtual and augmented reality
- data science
- statistics
- mathematics
- physics.

In addition to CTI itself, SCEMS also embeds the La Trobe Cyber Hub (cybersecurity centre) and Cisco Centre for Artificial Intelligence and the Internet of Things. The most recent Excellence in Research Assessment exercise conducted by the Australian Research Council, rated six distinct areas at or above world average: civil engineering (well above); information systems (above); artificial intelligence and image processing (above); pure mathematics (above); statistics (above); applied mathematics (world standard).

La Trobe **Business School**

La Trobe Business School is an accredited member of AACSB International – the Association to Advance Collegiate Schools of Business – the highest standard of achievement for business schools worldwide.

La Trobe Business School conducts research across a wide range of disciplined areas and is recognised as a world leader by the Australian Government in Excellence in Research Australia assessment. It rates "well above world standard" for banking, finance and investment, while commerce, management, tourism and services, accounting, auditing and accountability, business and management, tourism, economics and applied economics are all "at world standard" (ERA 2018-2019).

La Trobe Business School is home to a number of cross-disciplinary research centres. These centres are engaged with community, industry and international experts in business and management. The purpose of the centres is to further expert knowledge in their respective fields.

Centre for Data Analytics and Cognition is one such research centre that focuses on the theoretical advancement of AI, as well its practical contributions to organisations, the economy and society.

The Business School offers academic programs including the Bachelor of Business Analytics and the QS ranked Master of Business Analytics.

La Trobe Business School has research strengths in:

- Corporate social responsibility, governance and business ethics
- Tourism, hospitality and event management
- Financial reporting and taxation
- Critical social and sustainability accounting
- Asset pricing and investment
- Financial market microstructure and information
- Financial econometrics
- Social marketing
- Branding.

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LA TROBE IS THE

FIRST UNIVERSITY IN AUSTRALIA

TO RECEIVE A SIX-STAR RATING FOR SUSTAINABLE LARGE-SCALE DEVELOPMENTS[5]

1. Times Higher Education (THE), 2020, World University Rankings 2021; Consejo Superior de Investigaciones Científicas (CSIC), 2021, Ranking Web of Universities.
2. Quality Indicators for Learning and Teaching (QILT), 2021, ComparED: Overall undergraduate results for La Trobe University.
3. Australian Research Council, 2019, Excellence in Research for Australia (ERA) Outcomes 2018.
4. THE Asia-Pacific University Rankings 2019.
5. Green Star – Communities accreditation, measured against five impact categories: governance, liveability, economic prosperity, environment and innovation

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