Project Title:	**Quantifying intelligence and its emergence**
Project Number	**IMURA0397**

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Research Academy Themes:

Highlight which of the Academy's Theme(s) this project will address?
(Feel free to nominate more than one. For more information, see www.iitbmonash.org)

1. <mark>Advanced computational engineering, simulation and manufacture</mark>
2. Infrastructure Engineering
3. Clean Energy
4. Water
5. Nanotechnology
6. Biotechnology and Stem Cell Research

The research problem

Define the problem

We endeavour to quantify and compare intelligence of human, non-animal and machine alike. We do this taking time into account, extending (Hernandez-Orallo&Dowe, *Artificial Intelligence*, 2010), and we will also do this for hybrids and communities. The approach will continue our earlier work - going back to Dowe&Hajek (1997) and Hernandez-Orallo&Minaya-Collado (1998) - using Minimum Message Length (MML) and algorithmic information theory. This will give us greater insights into animal intelligence and the progress of machine intelligence.

Project aims

Define the aims of the project

Expected outcomes

Highlight the expected outcomes of the project

How will the project address the Goals of the above Themes?

Describe how the project will address the goals of one or more of the 6 Themes listed above.

Capabilities and Degrees Required

List the ideal set of capabilities that a student should have for this project. Feel free to be as specific or as general as you like. These capabilities will be input into the online application form and students who opt for this project will be required to show that they can demonstrate these capabilities.

Good at or interested in mathematics, able to program