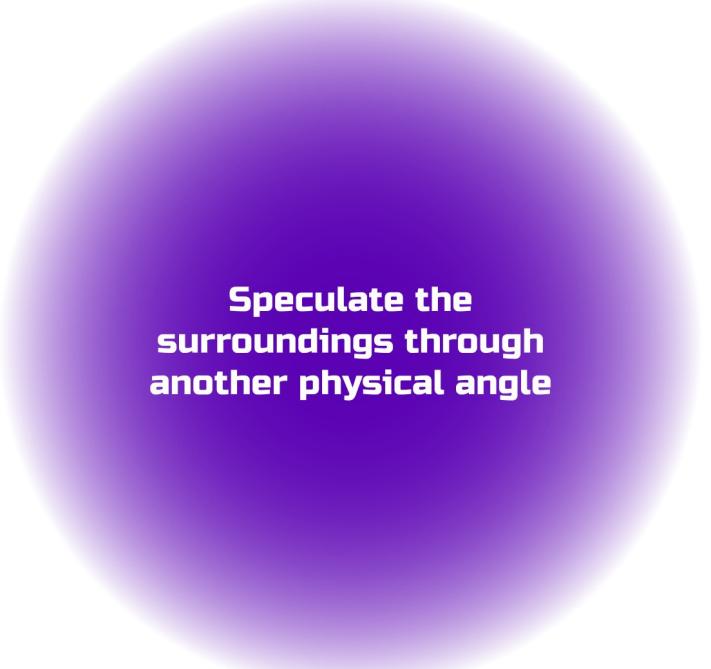




An Enquiry Concerning Robot Understanding

Wesley Deng, Tina Taleb,
Robert Hoogsteden, Jessie Lyu

Motivation



**Speculate the
surroundings through
another physical angle**

From Human's Point of View



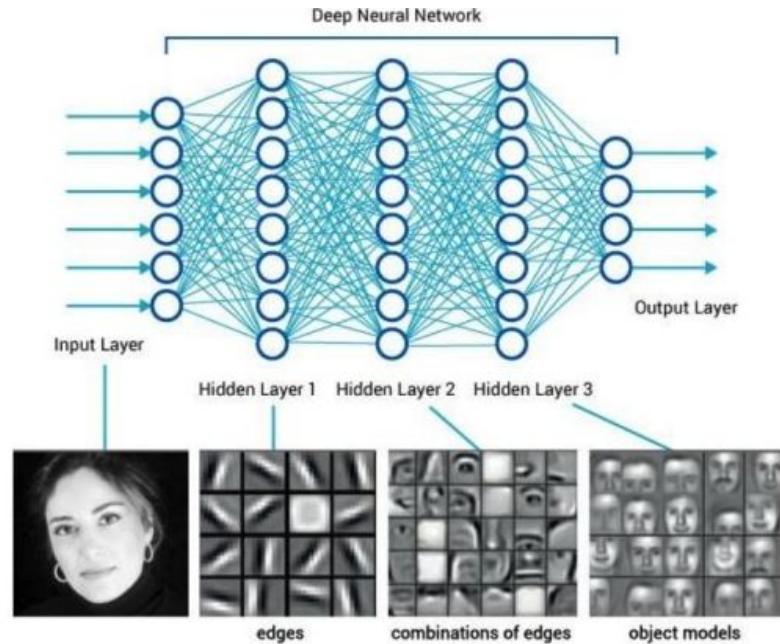
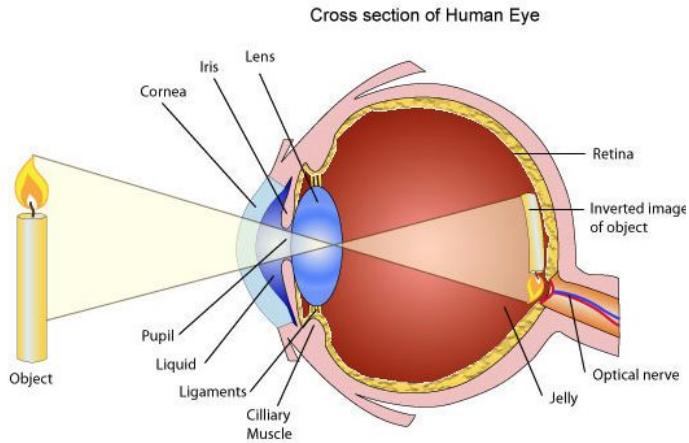
From Husqvarna's Point of View



Motivation

Analyzing the context
with another
“processing system”

Human Visual System vs. Computer Vision





Input image from ImageNet.



Activation grid from InceptionV1, layer mixed4d.

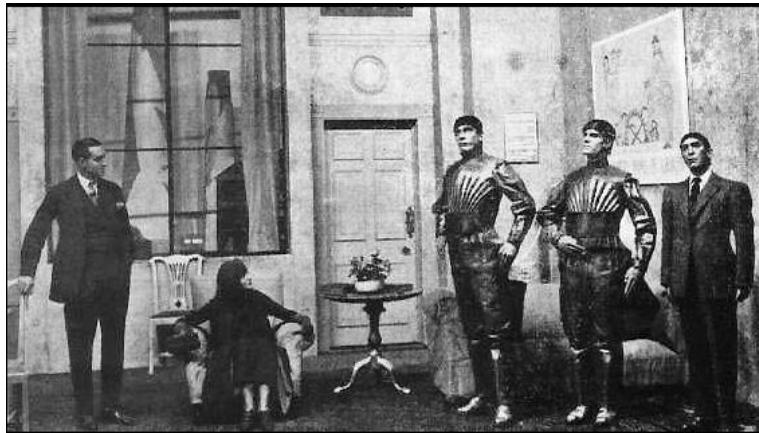
Motivation



Interacting



Expressing



Karel Čapek : R.U.R. (*Rossum's Universal Robots*)

What We Will Show



Sensing



Interacting



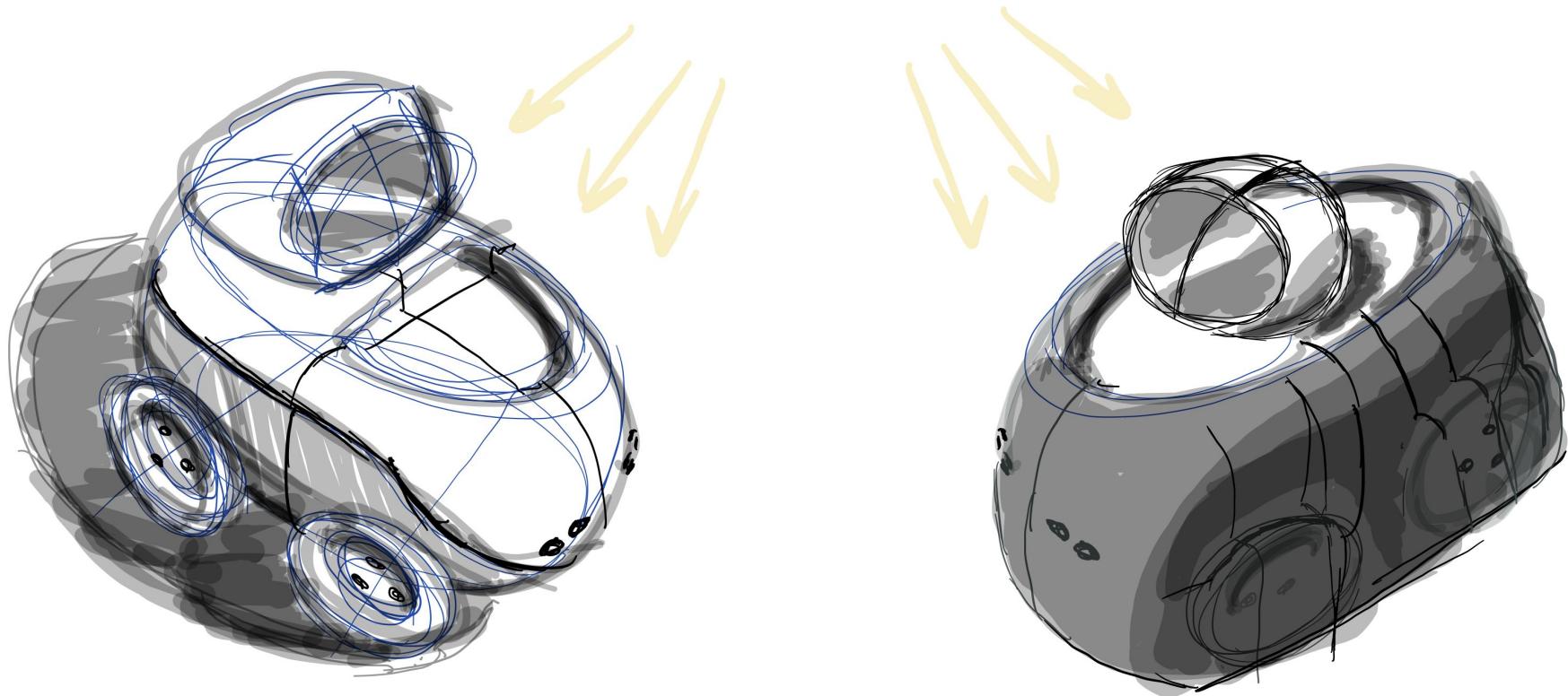
Interpreting



Expressing

And... Where did we start?

Design



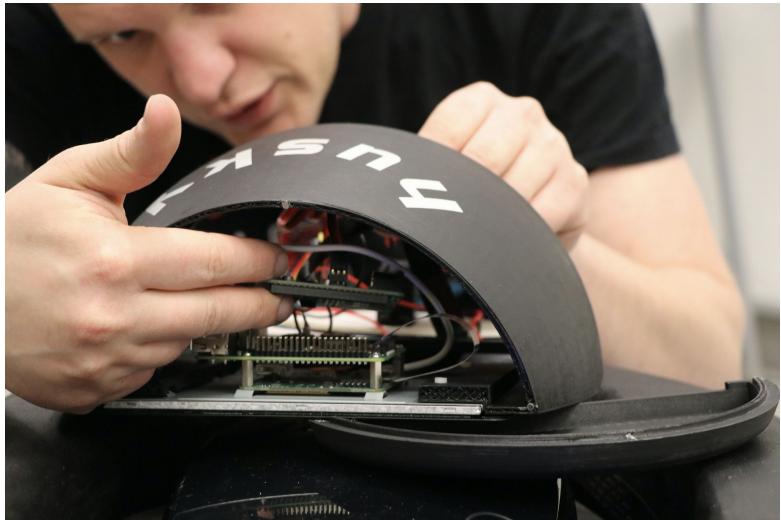
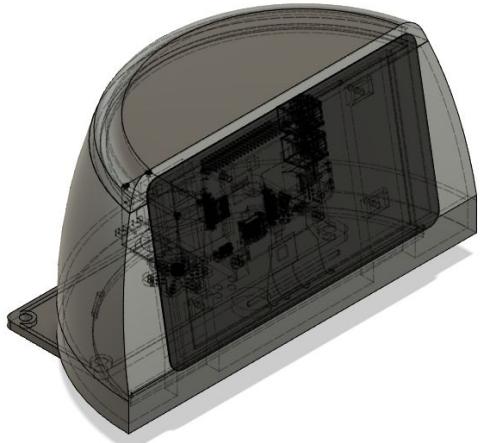
Fabrication



Fabrication



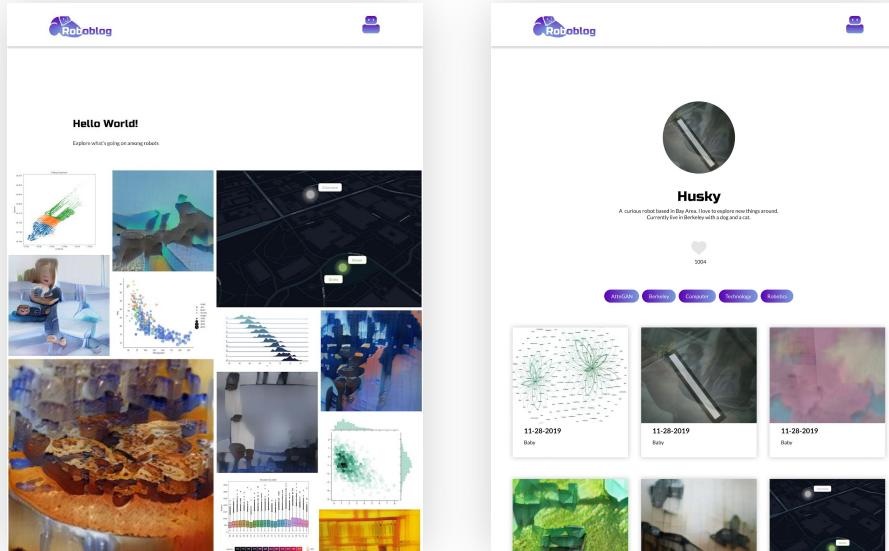
Hardware



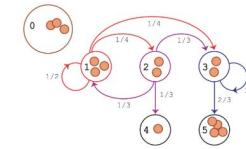
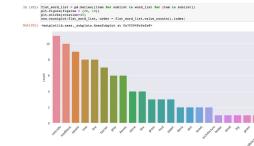
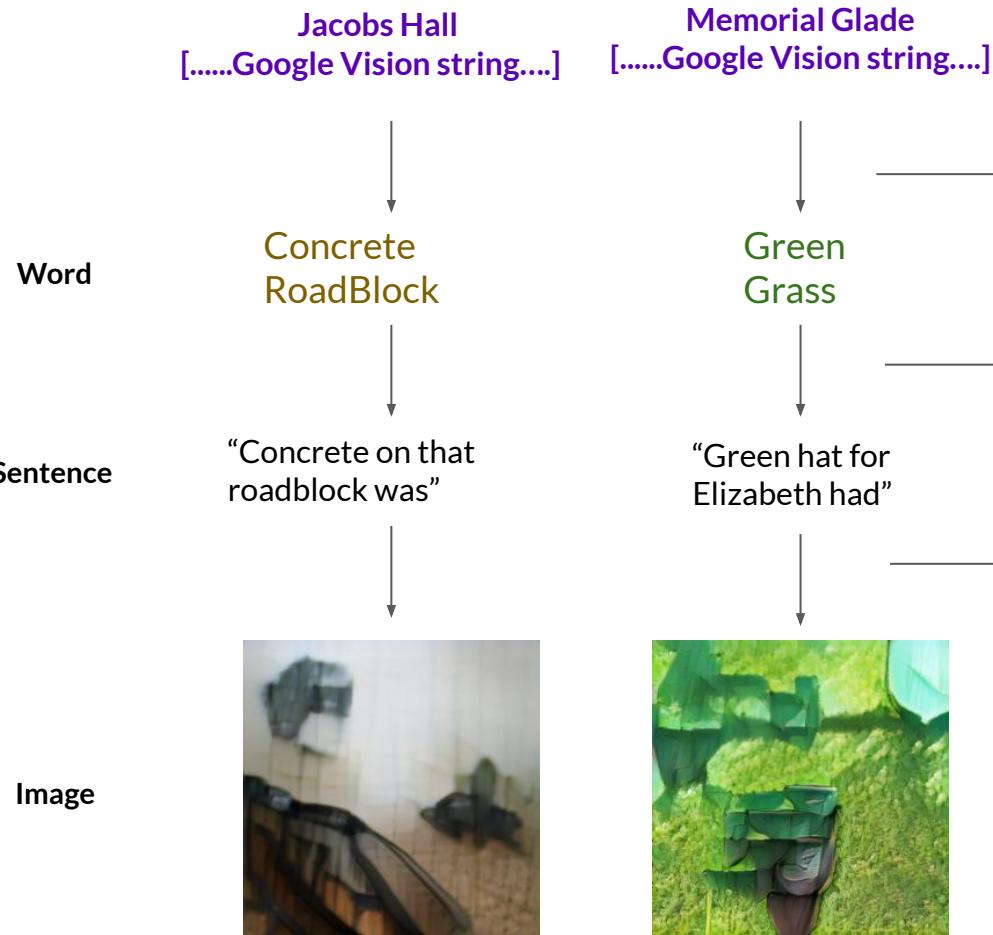
Demo



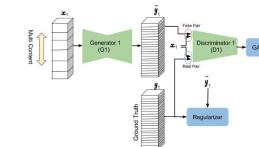
Roboblog



[Link to Roboblog](#)



Pandas, Numpy, Seaborn
Basic Statistic.

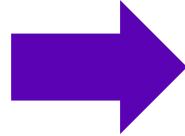


Markov Chain based on
“Pride and Prejudice”
Information Theory

AttnGAN, Microsoft
Deep Learning

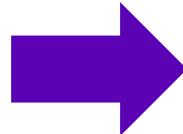
<https://www.microsoft.com/en-us/research/uploads/prod/2019/06/1902.10740.pdf>

Depicting the visual impression of the moment,
especially in terms of the effect of **light** and **color**.



Impressionism

Depicting the visual impression of the moment,
especially in terms of the effect of **light** and **color**.





Is artificial intelligence set to become art's next medium?

AI artwork sells for \$432,500 — nearly 45 times its high estimate — as Christie's becomes the first auction house to offer a work of art created by an algorithm

What We Have Shown



Sensing



Interacting



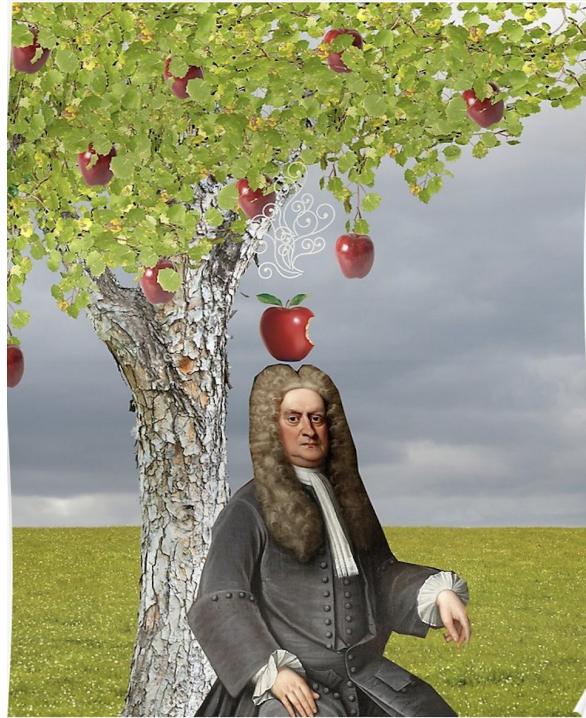
Interpreting



Expressing

But... Why Do We Care?

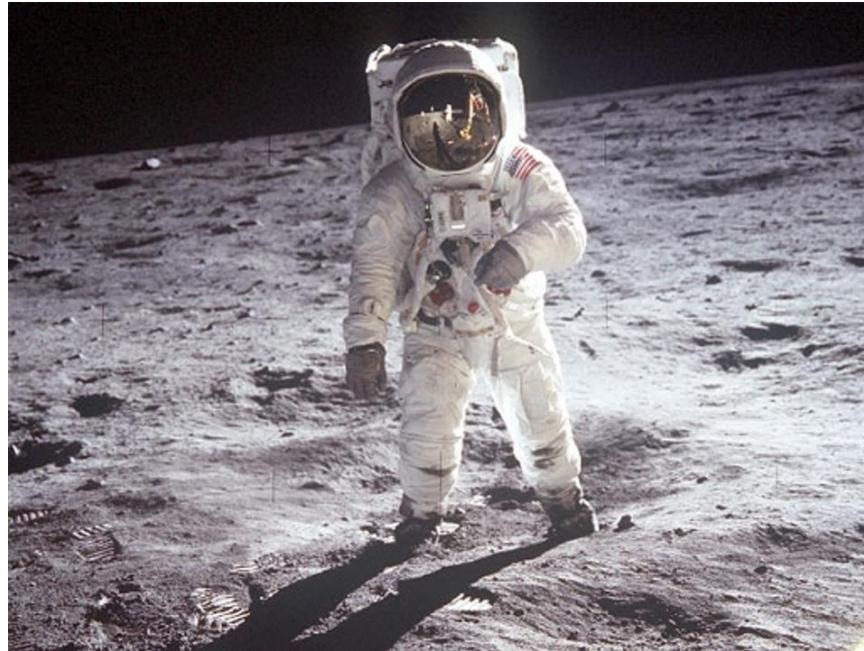
Scientist: Sense and Interact



Scientist: Interpret and Express

$$F = G \frac{m_1 \times m_2}{d^2}$$

From $F = G \frac{m_1 \times m_2}{d^2}$ **to:**

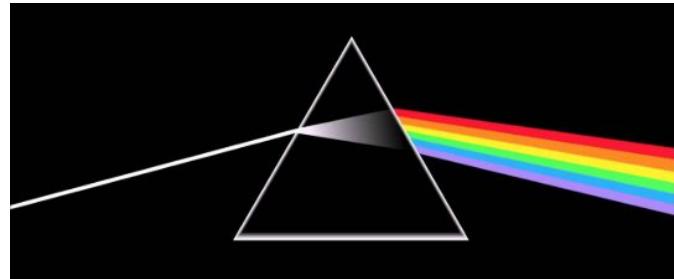




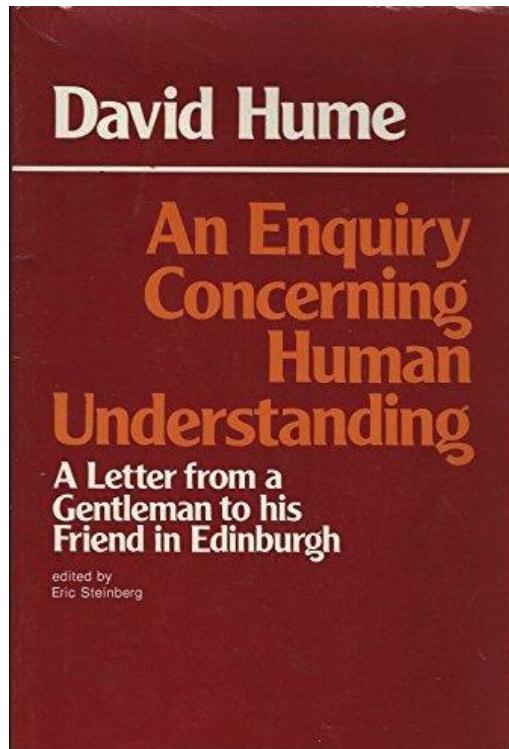
Artist



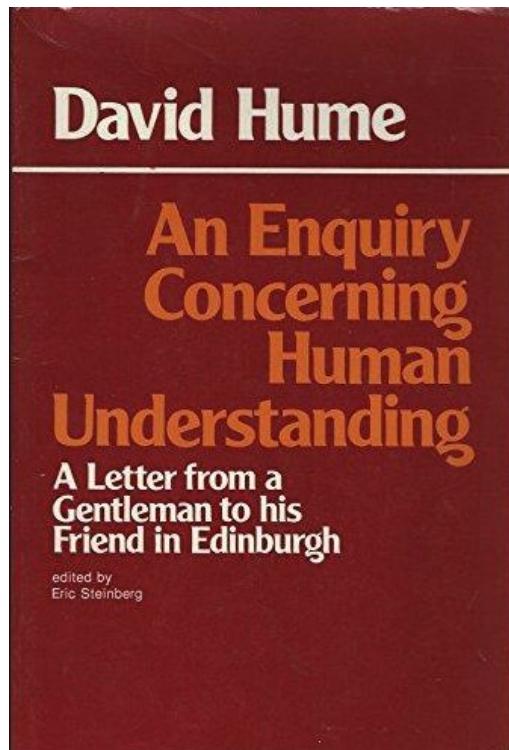
矧含萬殊靜跡不同當其欣
於所遇輒得於己快然自足不
知老之將至及其所之既倦情
隨事遷感慨係之矣向之所欣
俯仰之間已為陳迹猶不能不
以之興懷况脩短隨化終期於
盡古人云死生亦大矣豈不爲
陳之謂也



An Enquiry Concerning Human Understanding



An Enquiry Concerning Robot Understanding





Team

