

# How to Become a Robopsychologist

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## Robopsychology

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## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
1.1	Asimov's Prophecy . . . . .	1
1.2	Fulfilling the Prophecy . . . . .	1
1.2.1	Samu B�tfai . . . . .	1
1.2.2	Robopsychology on Demand . . . . .	1
<b>2</b>	<b>Robopsychology</b>	<b>1</b>
<b>3</b>	<b>The List of Known Robopsychologists</b>	<b>1</b>
<b>4</b>	<b>Bibliography</b>	<b>2</b>
4.1	Science Fiction . . . . .	2
4.2	Robopsychology . . . . .	2
4.3	Developmental Robotics . . . . .	2

# 1 Introduction

Robopsychology does not really exist nowadays in 2016. You cannot be a robopsychologist because there is no such profession.

## 1.1 Asimov's Prophecy

The term robopsychology, introduced by Isaac Asimov in 1940, has mostly been presented in science fiction literature. But it is also true that very few research papers have already been written that have partly focused on this issue [Libin&Libin]. I may be wrong but anyway, I think that Asimov's vision shown in [Robbie] can be interpreted as a prophecy of the future of robotics.

## 1.2 Fulfilling the Prophecy

The developmental robotics approach to creating robots gives an opportunity to participate in fulfilling Asimov's prophecy 60 years later. To show this, let's consider how a computational mental organ of Samu can be developed.

### 1.2.1 Samu Batfai

The project called Samu Batfai is a disembodied developmental robotic initiative to support the evolving of a family chatter bot. The long-term goal of the project Samu is to develop a chat system that can talk in a natural language like humans do [Samu]. It is clear that currently this is only an utopian plan. By contrast, the immediate short-term goal is to create computational mental organs [PrenatalSamu]. In this latter case, we have been performing software experiments with potential mathematical models to simulate phenomena that can be observed in newborns and children.

### 1.2.2 Robopsychology on Demand

The first computational mental organ that was investigated is referred to as Mental Processing Unit (MPU). An MPU consisting of two 2D lattices. The first one receives the sensory input data from the reality and a unique COP-based Q-learning agent is assigned to each cell of the second one, where the task of the agents is to predict the future state of the corresponding cell of the input lattice. We say that the MPU has already learned the input if the predicted cells have already changed very similar to the input cells. For implementing this learning I use the well-known processes of attention called habituation and sensitization. For more details, see the paper [PrenatalSamu].

It has been my experience that determining the appropriate setting of the processes habituation and sensitization can be a very time consuming task, because we must perform numerous experiments to refine these processes in order to ensure the success of learning. I feel this programming activity may be considered as one of the first robopsychology works.

# 2 Robopsychology

# 3 The List of Known Robopsychologists

Would you like to be on the list of the known robopsychologists? Please visit <https://github.com/nbatfai/Robopsychology>, fork the project then add your details and finally send a pull request. An important criterion is that you design and perform your own software experiments.

1. Dr. Susan Calvin  
[Robbie](#)  
[Lenny](#)
2. Dr. Norbert Batfai  
[SamuBrain](#)  
[SamuKnows](#)

## 4 Bibliography

### 4.1 Science Fiction

[Robbie] Isaac Asimov, "Strange Playfellow", Super Science Stories, 1, 67-77, 1940.

### 4.2 Robopsychology

[Libin&Libin] Alexander V. Libin and Elena V. Libin, "Person-robot interactions from the robopsychologists' point of view: the robotic psychology and robototherapy approach", Proceedings of the IEEE, DOI 10.1109/JPROC.2004.835366, 92/11, 1789-1803, 2004.

### 4.3 Developmental Robotics

[PrenatalSamu] Norbert Bátfai and Renátó Besenczi, "Samu is His Prenatal Development", submitted manuscript, 2016.

[Samu] Norbert Bátfai, "A disembodied developmental robotic agent called Samu Bátfai", eprint arXiv:1511.02889, <http://arxiv.org/abs/1511.02889>, abs/1511.02889, 2015.