Structuring an AGI research

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0.1 Learned in this study

0.2 Things to explore

- Extract references automatically based on what is said in a text

1 Overview

2 My approach

- Create a directory on my computer where I store everything related to my research
- For each topic I find interesting, create a directory within that directory and start collecting information about the topic. It might be ideas, questions, notes, url of relevant websites, book titles, authors, etc.
- Frequently go through the list of directories in the main directory in order to review the state of each "project" and add new ideas, questions and information when appropriate
- From time to time a project may take a good amount of my time. For instance, if I become interested in handwriting recognition, I might do a lot of research on the topic and thus update the content of the directory more frequently than for other topics which I might only have had a cursory interest

I have two systems I use to approach research:
* reading about theory and then devising projects
* devising projects and reading the appropriate theory

3 Approaches suggested by others

3.1 Pei Wang

The most general questions every AGI researcher needs to answer include:

- What is AGI, accurately specified?
- Is it possible to build the AGI as specified?
- If AGI is possible, what is the most plausible way to achieve it?
- Even if we know how to achieve AGI, should we really do it?

A complete AGI work normally includes:

- a theory of intelligence,
- a formal model of the theory,
- a computational implementation of the model.

Source: https://sites.google.com/site/narswang/home/agi-introduction#TOC-AGI-Basics

3.2 Unknown

Define the problems and questions you are trying to solve.

- This is what I am solving
- This is what I am building
- This is how I am solving it
- Here is how we can think about it now

Source: ?

3.3 Kyungnam Kim

- State the problem you want to solve in general terms
- Collect previous work related to your research
- Understand the material
- Implement the ideas found in previous work
- Specify your problem in details
- Think (and use Pólya How to Solve It)
- Implement your idea and compare it/Review
- Report/Publish
- Discuss topic with colleagues

Source: http://www.umiacs.umd.edu/~knkim/HowToPhd.htm

3.4 Robert Feldt

- Good research should be novel:
  - Describe state-of-the-art (SotA)
  - Describe state-of-the-practice (SotP)
  - Describe how your work is different from them
- Good research should be relevant:
  - Consider what problems we face today or are likely to face within some time span
  - Consider what other researchers and practitioners problems are and what they consider important
- Good research should present generalities/principles
- Good research is often systematic and structured
  - Systematic: You have a clear idea of what to do and that this will clearly "cover" the most likely relevant aspects
  - Structured: There is good "logic" and "flow" in what you are trying to do and how you describe it
- Good research claims something and validates those claims
- Focus on a part of your subject area that is limited so that you can go deep in 40-150 papers
- Create a taxonomy of the papers you find

Source: http://www.robertfeldt.net/advice/feldt_guide_to_starting_a_phd.pdf

4 See also

- Automated research

5 References

- http://karpathy.github.io/2016/09/07/phd/