

What is the “Gazelle” AGI?

[Technical Pitch]

by Stefan Reich, Apr 11 2021

The **Gazelle** system implements the most recent advances within the **symbolism approach to AI**.

Gazelle builds on the ideas developed in groundbreaking symbolist projects like “Cyc” while addressing their shortcomings. We aim to prove that a symbolist AI is capable of delivering conversational AI so advanced it can reliably be used as a replacement for traditional user interfaces. Gazelle has been in development for 7+ years.

Many ideas come together to make Gazelle work. Here are a few.

- **Texts** and **patterns** are the primary data types we deal with. Gazelle is all about the *art* of pattern matching.
- In addition to that, **everything is a first-class citizen** in the Gazelle database and connected to everything else. This includes inputs, patterns, procedures, mathematical operations, input transformers, evaluations, logs, meta-procedures, assumptions and statements (both about the world and about the system itself). This heterogeneity and connectedness is the key to how the database works and how it begins to **self-organize** step by step.
- Indeed, **self-reflection** is a major component of the system. The purpose of an AI is to produce working code for difficult tasks, so we reify just this process within the NLP system, so the AI can think and talk about its own progress. This is a crucial idea that, as far as the author knows, is missing from any other AI system developed so far.
- Both **developers and users can manually train** and improve the AI by various means. Developers can write scripts in natural language that will be evaluated and used by the AI. Users can, through giving hints in a relatively accessible UI, steer the AI in the right

direction. In the last stage, the system will learn directly from each input.

- A gradual **transition** will happen **from manual to automatic training** as the **AI begins to replicate** strategies successfully employed by humans.
- The AI uses **scenarios** which are very flexible mental models of either concrete or abstract situations.
- Both **concrete and abstract patterns** are used to give fast as well as „deep“ results when interpreting input.
- Inputs are processed both loosely – just **„by keyword“** – and rigorously (according to **precise English grammar**).
- We start with an **all-English system**, the making of which is the hard part of the process. When this system is functional, **translation to other languages** will be very easy. The inner workings of the AI can be kept in English or translated as well.
- Gazelle is a **base NLP technology** which can be used in **countless kinds of products**. Personal digital assistants come to mind. Tools to build, maintain and query a knowledge base. Any kind of chat-like interface to a back-end or database. Computer-assisted programming is another huge field we plan to provide solutions for. In fact, Gazelle’s pattern system is flexible enough to understand real-life source code as well.

Currently there is a development sprint in a 4-person team going on until last week of April 2021. We make great progress and expect to have some actual demos ready by that date.

However, there is urgent need to acquire new manpower/funds so we can continue development from there.

AGI = Artificial General Intelligence
NLP = Natural Language Processing