**Cognitive Computing Systems**

Cognitive Science is interdisciplinary in nature and it has offshoots in different fields and combines fields like psychology, neuroscience, anthropology, linguistics, philosophy, and artificial intelligence to understand the mind. Concept of mind can be broken into tangible research areas by using various methods which include studying single cell neuroscience, brain imaging, behavior experimentations and observing peoples or animals in their natural environment.

**One of the Big questions is how does the mind get so much out of so Little?**

Goal is to understand and research in a wide ecosystem of general-purpose computational framework for understanding how peoples make these inferences and how they can be successful.

Brains ( as per the recent hypothesis & argued), are essentially prediction machines. They are bundles of cells that support perception and action by constantly attempting to match incoming sensory inputs with top-down expectations or predictions. This is achieved using a hierarchical generative model that aims to minimize prediction error within a bidirectional cascade of cortical processing. Such accounts offer a unifying model of perception and action, illuminate the functional role of attention, and may neatly capture the special contribution of cortical processing to adaptive success.

I believe very little is known about the cognition. There is a need to understand the rich set of interlocking issues in the study of cognition. Existing theories say so little neglects social and cultural factors, emotion, and of the major points that distinguish an animate cognitive system from an artificial one: the need to survive, to regulate its own operation, to maintain itself, to exist in the environment, to change from a small, uneducated, immature system to an adult, developed, knowledgeable one.

Cognitive computing systems can synthesize data from various information sources, while weighing context and conflicting evidence to suggest the best possible answers. To achieve this, cognitive systems include self-learning technologies that use [data mining](https://searchsqlserver.techtarget.com/definition/data-mining), pattern recognition and natural language processing ([NLP](https://searchbusinessanalytics.techtarget.com/definition/natural-language-processing-NLP)) to mimic the way the human brain works.

Using computer systems to solve the types of problems that humans are typically tasked with requires vast amounts of structured and unstructured data, fed to [machine learning](https://searchenterpriseai.techtarget.com/definition/machine-learning-ML) algorithms. Over time, cognitive systems are able to refine the way they identify patterns and the way they process data to become capable of anticipating new problems and model possible solutions.

To achieve those capabilities, cognitive computing systems must have five key attributes, as listed by the Cognitive Computing Consortium.- Adaptive, interactive, iterative and stateful and contextual.

The term cognitive computing is typically used to describe AI systems that aim to simulate human thought. Human cognition involves real-time analysis of environment, context and intent, among many other variables that inform a person's ability to solve problems. A number of AI technologies are required for a computer system to build [cognitive models](https://searchenterpriseai.techtarget.com/definition/cognitive-modeling) that mimic human thought processes, including machine learning, deep learning, neural networks, NLP and sentiment analysis