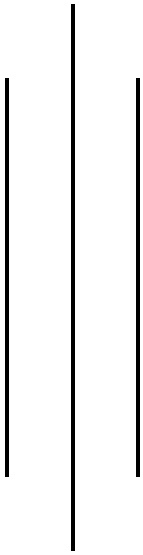
Nepal College of Information Technology

(Affiliated to Pokhara University)

Balkumari, Lalitpur

INTELLIGENT SYSTEMS [INTS]

Tutorial 1



Title: Write about current and future trends of AI.

SUBMITTED BY:

Nipesh Shrestha

6th Sem, BEIT

CRN 13422

SUBMITTED TO:

Mr. Krishna KC

1. DESCRIBE CURRENT AND FUTURE TRENDS OF ARTIFICIAL INTELLIGENCE (AI).

Artificial Intelligence (AI) is the part of computer science concerned with designing intelligent computer systems, that is, systems that exhibit the characteristics we associate with intelligence in human behavior — understanding language, learning, reasoning, solving problems, and so on.

Current Trends of AI

- **Deep learning:** We will see an exponential improvement in performance of Convolutional Neural Networks (deep learning), particularly as it will be paired with significant computation resources of ever-growing supercomputers. Deep learning is one of the top areas of focus for 2016.

- **AI replacing workers**: It is being seen as a lot more high-level interest in this issue—"whether this industrial revolution is different from the others." Serious groups of people are trying to figure out what will happen when white collar jobs, which are primarily about pure information processing—something computers do well—migrate to white collar jobs which are safe, people interacting with other people.

- **Neurocomputing** is a field of study that uses computers to simulate the human brain and perform specific tasks, such as improving operational efficiency or automating repetitive activities. There is a sizable effort dedicated to developing commercial neuromorphic hardware (neuromorphic computing), and the ability to perform massively parallel processing on low-power, embedded processors, makes possible a wide range of new, dramatically more powerful, devices and applications.

- **Internet of Things (IoT)**: More and more devices becoming connected and resulting in smarter homes, smarter cars, smarter everything. IoT is leading to a point where no object will just be an object—it will all be wirelessly connected to something else.

- **Breakthroughs in emotional understanding**: AI that can detect human emotion is, perhaps, one of the most important new areas of research. Our computers' ability to understand speech will lead to an "almost seamless" interaction between human and computer. With increasingly accurate cameras, voice and facial recognition, computers are better able to detect our emotional state.

- **AI in shopping and customer service**: Speaking of customer service and shopping, businesses are starting to use AI to figure out what makes customers happy or unhappy. The North Face and other companies are using AI to help customers figure out the perfect item

Future Trends of AI

The centuries' long quest to develop machines and software with human-like intelligence inches closer to reality. Scientists develop intelligent machines that can simulate reasoning, develop knowledge, and allow computers to set and achieve goals, moving closer to mimicking the human thought process. These intelligent systems improve accuracy of predictions, accelerate problem solving and automate administrative tasks bringing in an era of automation.

Future trends of Artificial intelligence:

- **Cognitive analytics**, where machines learn from experience and build associations, help develop technology systems that evolve hypothesis, draw conclusions and codify instincts and experience. Cognitive computing will further develop and complex systems now run by teams of people will be automated. Computers are already doing the work of trained radiologists to analyze medical images.

- **Parallel information processing**, aided through chips custom designed for AI applications, help parallel processing of vast amounts of data.

- **Smarter gets redefined** with the advances in sensor, cloud and machine learning technology, and pushes the boundary of smarter homes, cars, infrastructure and just about everything.

- **Deep learning** approaches allow processing of raw data including images, speech and natural language; thus providing deeper insights.

- **Face-reading machines** decipher micro facial expressions to build meaningful information on the emotional state of the user, improving human-computer interaction in areas of e-learning and e-therapy. Now on Facebook as photos are shown with suggested names already on them. Next, robots will be able to recognize people based on their facial characteristics.

- **Intelligent automation** combines automation with artificial intelligence that allows knowledge workers, from physicians to investment analysts to plant supervisors, to process, understand and use ballooning volumes of information.

- **Algorithmic discrimination** may become a social issue. For example, in 2015, Google was criticized for showing high-income job ads to men six times more than women. Algorithms are being used to assess personalities and predict behavior. Insurance underwriters are already known to toll your social media presence to determine how much risk you may present.

REFERENCE:

- ✓ http://government-2020.dupress.com/driver/artificial-intelligence/
- ✓ https://www.cybertrend.com/article/17737/trends-in-artificial-intelligence