Welcome to the World of AI: ChatGPT and its cousins

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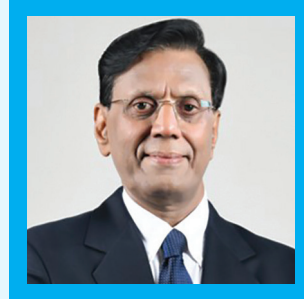

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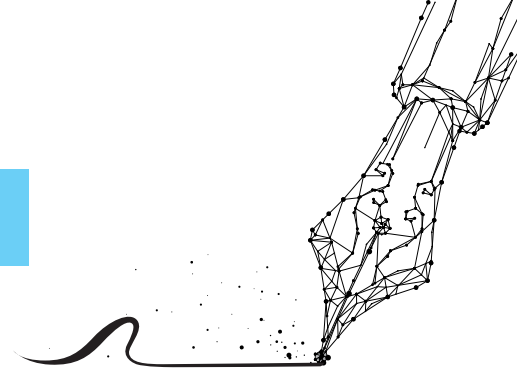Tata Technologies

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Welcome to the World of AI: ChatGPT and its cousins

Mr. Raju Bhatnagar
Partner
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We all revel in spouting cliches like *"We live in a VUCA World"* or "Change is the only constant" or *"Adapt or Perish",* etc. The underlying theme is that in the current times we need to constantly recalibrate and upgrade our skills and knowledge to continue to remain relevant.

Yet when a Tsunami of change happens, we feel extremely insecure. This is exactly what seems to be happening with the advent of the latest AI "kid on the block": *ChatGPT or Chat Generative Pre-Trained Transformer.* This was launched on 30 November, 2022 and has taken the world by storm, garnering over 100 Mn users in a couple of months.

Simply stated ChatGPT is an artificial intelligence tool that generates human-like text responses to questions and word prompts (Natural Language Processing). It is possible to type in a question or a request and the tool returns a response in complete, well-crafted sentences, as would normally be provided by a flesh and blood person. It is specifically designed to mimic real conversations and is capable of explaining as well as remembering and building upon what was said earlier and factoring in corrections and inputs that were provided to fine tune the response. The Tool learns by itself !!

How does ChatGPT function?

Once a query, in simple English, is submitted, ChatGPT analyses available information in the public domain and uses its algorithms to find content that addresses the query. One could also look at it as a *"next stage"* of a web search engine, where it not only provides a list of links to browse through and determine relevance, but it makes the connections for the querist and provides answers in complete, logical and grammatically correct sentences. It is able to provide human-like conversational responses by using its predictive text algorithms and tis AI capabilities.

What could be possible use cases?

The use cases are literally limited only by one's imagination. Some illustrative queries could be:

- Typing a para in "not so good English" and allowing the tool to provide output in "good" English;
- Brainstorming content ideas on keywords or topics e.g., generating, say, 100 variants to a marketing by-line, making it easier for the marketing professional to complete the task on hand;
- Translating text from one language to another;
- Using chatbot-generated answers to create personalised automated customer service tools; etc

Or one could even post straight-forward queries like:

- Explain quantum computing in simple terms
- Suggest some creative ideas for a 5-year old's birthday
- Write python code to create a graph of the current month's business metrics; etc.
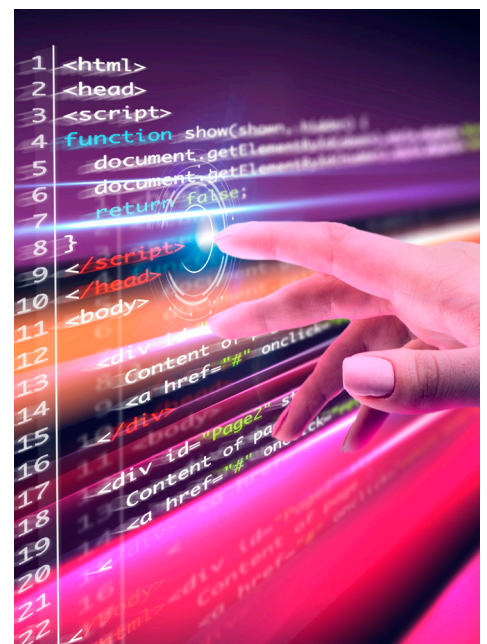
It also has extensive applications by industry, viz.,

Healthcare Industry

- Virtual Health Assistants to provide health information and support to patients;
- Assist in medical coding and billing by suggesting most appropriate codes based on symptoms and medical history;
- Educate patients on various health topics, e.g., managing chronic conditions, understanding treatment options, adopting healthy lifestyles, etc.

Manufacturing Industry

- Supplies and inventory checks;
- Integrate it with ERP or other systems in order to access and analyse information faster;
- Automating customer support or even handling floor queries, etc.

BFSI Industry

- Enhancing customer engagement and providing personalised customer support;
- Multi-lingual Product information;
- Lead generation as well cross-selling and up-selling;
- Claims processing and settlement for the insurance industry, etc.

What about other AI developments?

Interestingly, while ChatGPT is making the biggest splash, there is frenetic activity on multiple other fronts. Some examples are briefly mentioned below

Competitors to ChatGPT:

Google Bard AI Tool: This is Google's conversational AI chatbot. It is a new experimental Tool aimed at countering the popularity of the ChatGPT tool. Bard is a more compact model that uses considerably less computing power, which could allow Google to scale rapidly and also provide quicker feedback. If one was to layer on Google's existing information about individual preferences, it could provide curated and personalised responses from the very initial stages;

Jasper: (Jasper.ai) Focus is on the marketing domain and creating content, in 26 languages, tailored for your brand. It claims that it can generate months of social media content in minutes.

Chatsonic: Chatbot for news content creators

Socratic: Chatbot for kids and students, and several others.

Other AI platforms that are available for users:

Music LM: It enables generation high-fidelity music from rich text descriptions, including the instruments required e.g., cappella chorus, guitar solo, jazz with saxophone, etc. For example, one could type "Meditative song, calming and soothing, with flutes and guitars. The music is slow, with a focus on creating a sense of peace and tranquillity" for a musical score to get generated in seconds. Some examples of "Generated Music" can be heard on the link https://google-research.github.io/seanet/musiclm/examples/.

Dall-E: It enables creation of original, realistic images and art from a text description in natural language. It has the ability to combine concepts, attributes and styles. The appended high-quality picture was autogenerated in approx. 3 seconds, of inserting the text descriptor !!

Voice AI: This is a voice changing technology that has been trained over a voice data set of 15 million speakers. In effect, you can speak something and have your voice changed either on a "record" basis, which means that you record your voice and the play back changes your voice. Or, your voice can be changed "live", which means that with a little bit of a lag your speech is converted into the chosen speakers' voice and played out. You can actually change your voice to sound like say Barack Obama or Donald Trump or Charlie Chaplin or even Marilyn Monroe !!

Beautiful AI: It enables significant reduction of time spent in creating presentations. The tool is intuitive, predicting the next requirement and also automatically ensuring that information and data look more presentable and clearer when projected. It allows access to innumerable templates, millions of photos and videos, integrates voice narration and enables customisation, to provide a distinctive look and feel.

AUUG Motion Synth: (https://www.auug.com/). This enables transforming an iPhone or a touch phone into a motion based musical instrument, which can be played or even used to compose music. One no longer needs extensive training to play complex music pieces on instruments !! It also enables "creation" of music by typing a description of the type of music and auto-generating the musical score. The link https://www.auug.com/portfolio/start-show/ provides a brief demo of the capability of this tool.

There are ever so many more tools that are coming up like mushrooms after a rain, all targeted at removing the drudgery and repetitiveness in our work lives and allowing us more time to actually be creative and / or add value.

Needless to add, as is the case with every development and tech innovation, there will always be a positive side as well as a negative side to any innovation or invention.

But all said and done, these are really very exciting times to be living in.

Article 1

The Role of Artificial Intelligence and Importance of Engineers Developing Code for Autonomous Vehicles

Mr. Uday Kumar
Director
Cadmaxx Solutions Pvt Ltd

Gently but steadily, India is playing a growing role in the global quest for autonomous electric vehicles. Autonomous vehicles are starting to become a real possibility in some parts of industry. Agriculture, transportation and military are some of the examples. Indian techies are estimated approximately to develop 35 per cent of the 100 million lines of codes required to develop one fully driverless car for global vehicle makers. The day when we are going to see autonomous vehicles in everyday life for the regular consumer is quickly approaching. Building driverless cars is complex task which requires deep knowledge and technology. An electric car, for example, has between 60-70 electronic controllers for handling the windows, seats, and brakes independently. Engineers are moving towards 'domain controllers' which entails integrating 10-20 independent controllers into one, so that only four or five domain controllers can control functions such as the entire chassis or the braking system. Many of the operations that vehicles must perform are based on sensor information and some AI algorithms. Vehicles need to collect data, plan their trajectory and execute the trajectory. These tasks, especially the last two require non-traditional programming approaches and rely on machine learning techniques, which are part of AI.

There are many tasks for autonomous vehicles that are still presenting significant challenges and require sophisticated approaches. Replacing the cognitive and motor abilities of a human is not easy and will continue to be work in progress for years to come. There are different tasks that AI needs to solve so that we achieve reliable and safe autonomous drive. The number of sensors with real time data and the need for intelligent processing of the data can be overwhelming. AI is used in the central unit as well as in the multiple electronic control units (ECU) of the modern automobile. The AI applications in vehicles mainly consists of sensor data processing, path planning & execution, data collection. The end stage incorporates central computer or a server architecture as in data centres.

The table below summarizes AI technology integrated with auto electronics. Not included are AI used in auto manufacturing, supply chains management, quality control, marketing and similar functions where AI is making significant contributions.

Article 1

| AI Technology in Automotive		
Topic	Key Information	Other Information
Auto AI needs	▪ Understandable neural network decisions ▪ Neural network decisions must be stable ▪ Leam to handle AV edge cases	▪ Explainable AI is required for safety ▪ Impervious to hacked visual input data ▪ Untrained driving events for AVs
Current AI use	▪ Speech recognition & user interfaces ▪ Remote diagnostics service data ▪ Vision recognition ▪ AI-based ADAS: L1 and L2	▪ Alexa, CarPlay, Android Auto ▪ AI technology turns diagnostics to prognostics ▪ Driver monitoring systems (DMS) ▪ ACC, BSD, FCW, LDW, LKA, PA, others
Emerging AI use	▪ Limited driving pilots (L2+) and L3 AVs ▪ OTA software update software platforms ▪ Automotive cybersecurity software platforms ▪ Developing & testing AV use cases	▪ They should not be called autopilots ▪ OTA clients, SaaS & cloud analytics ▪ Cybersecurity clients, SaaS & cloud ananlytics ▪ Sensor fusion, vision system, software driver
Future AI use	▪ Deployment of AV use-cases: Software driver ▪ Minimize software bugs in code development ▪ Expand & improve AI-based cybersecurity	▪ Most complex AI development ever ▪ Identify & correct software errors ▪ Required for all auto software platforms
Source: Egil Juliussen, August 2021		

Future AI and CODES usage

AI and writing CODES are the most valuable and difficult applications for Autonomous vehicles. The goal is a software driver that is better than the best human drivers with none of the drawbacks of human behaviour. Software development is ripe for AI-based technology improvements. Identifying and fixing software bugs is likely to happen in the next decade via innovate AI technology. Cybersecurity advances derived from AI technology are perhaps the most pressing need for the automotive and other industries. The requirements are attracting large, ongoing investments.

Bottom line

AI technology and writing codes for autonomous vehicles both in tandem playing pivotal role and being major driving force in the automotive industry. Meanwhile, many more companies are focused on automotive AI. Assafety concerns grow, AI and code developers must heed caution signs lest unintended consequences stifle innovation. Topping this list are unlocking AI black boxes that limit deployment of trust systems. Elsewhere, bias in training data is a growing problem that is difficult to assess and consequently hard to solve.AI regulation is on the way from the EU, and other regions will follow. For the foreseeable future, AI and code developers must proceed with caution in building safe, robust automated systems.

Article 2
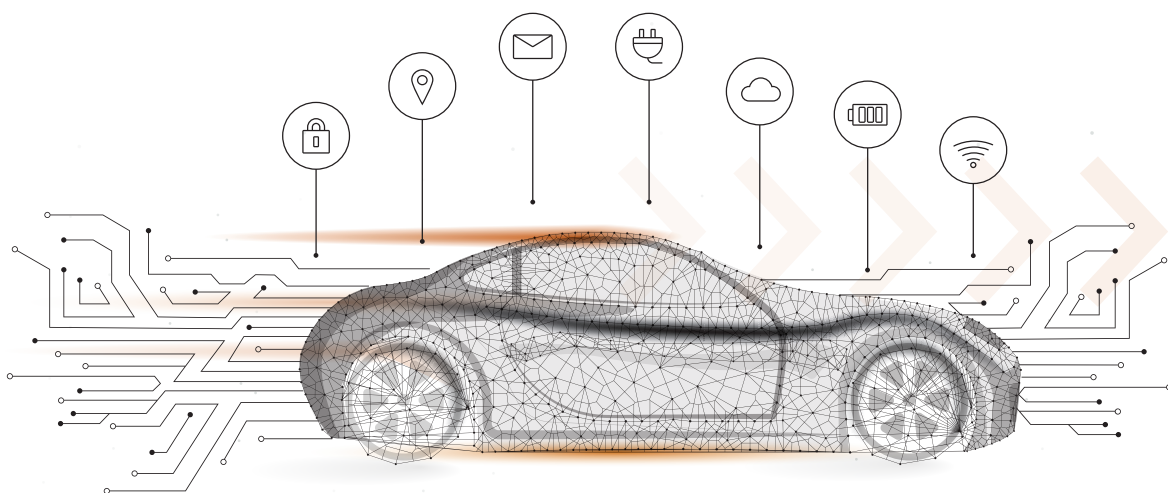
Importance of Insurance in Industry and Commerce

Mr. K R Subramanian
Consultant
Life & Non-Life Insurance

In my childhood days in Delhi, we hardly had any sources of entertainment. There was no television in the 1960s. So whenever a touring Circus came to Delhi, my father used to take me to the show. The last event in the circus used to be the daring acts of the trapeze artists swinging so high and interchanging from one oscillating swing to another in mid-air. I used to get so tense and nervous just viewing this gymnastic daredevilry. Then only my father pointed out the net which was spread well above the ground. The net was not a part of the gear used by the trapeze artists for swinging and performing the dangerous acrobatics and it remained aloof from all the hectic activity going on higher up. But it was there for a very vital role. TO PREVENT INJURY OR DEATH IN CASE OF ANY ACCIDENTAL FALL. Decades later, when I entered the insurance industry, I realised that INSURANCE also performs the crucial role of a safety net in this RISK filled world.

Insurance contracts have one crucial difference from other contracts. While commercial contracts like Sale of Goods etc. may follow the doctrine of "Caveat Emptor" (Let the buyer beware), insurance contracts are bound by the maxim of uberimmae fidei or Utmost Good Faith. And the beauty of this concept is that there is a duty of disclosure of all material facts by both the proposer for insurance as well as the insurance company.

One major reason for repudiation of claims by insurance companies is the non-disclosure of facts by the proposer which would have affected the judgement of the insurer to accept the risk and issue the policy. For instance, the non-disclosure of a pre-existing illness can lead to a repudiation of a claim for hospitalisation. Similarly the insurance company is also required to act in utmost good faith. In a very interesting case which went up to the Supreme Court for repudiation of an insurance claim, it was found that the insurance company had insured property/goods situated in the basement and the policy excluded any losses to goods stored in the basement! The Supreme Court order stated ""It is the foremost duty of the insurer to give effect to a due disclosure and notice in its true letter and spirit.

When an exclusion clause is introduced, making the contract unenforceable on the date on which it is executed, much to the knowledge of the insurer, non-disclosure and a failure to furnish a copy of the said contract by following the procedure required by statute would make the said Clause redundant and non-existent."

Insurance contracts are fairly complex for the lay person to understand easily. The price one pays for purchasing insurance protection is called "Premium". Since the price or Premium charged is for the purpose of covering specifically defined subset of risk events in a world of myriad risks, the insurance policies are drafted in an elaborate explanatory manner to clearly describe which are the events and losses which are sought to be covered under the contract and also which are the events and losses which are not being covered. That is why the document wording becomes complex and nuanced. Hence, at least for commercial enterprises, it is very important to avail professional risk management advice for procuring proper insurance, so that one does not end up with losses which do not get paid by the insurance companies.

The penetration of insurance in Indian Economy is poor compared to global standards. For instance the global average for penetration of General Insurance stands at 3.9% whereas the same for India is a mere 1 %. And I do not wish to even state the insurance density (that is amount of insurance per person) because it is extremely low due to our huge population.
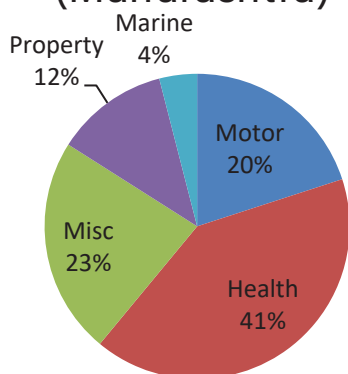
INSURANCE

Article 2

Though both Life Insurance and General Insurance are very important for any economy, it is General Insurance which plays a critical role in safeguarding the world of Industry and Commerce. In India, Maharashtra is far ahead of other states in General Insurance penetration (at 1.59%) and Density (Rs 3999 pe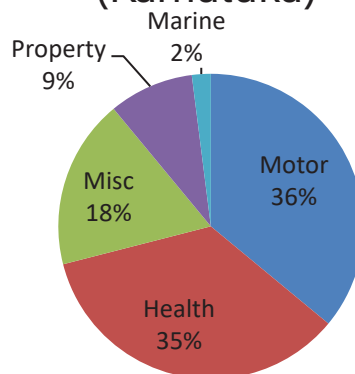r person). Karnataka occupies the next place with 1.02% and Rs 2777 per person. It will be, however, interesting to note the relative % of the different components of the General Insurance business in both the states as shown in the chart below. The classes of business other than Motor and Health command a far higher % in the total General Insurance pie in Maharashtra as compared to the split in Karnataka. This signifies that Karnataka needs to improve its General Insurance penetration and density much more, and also increase the share of industrial and Trade insurance, especially in view of the fact that Bengaluru is emerging as the Start-up capital of India.

GDPI - Classwise Split (Maharashtra)

- Marine 4%
- Property 12%
- Motor 20%
- Misc 23%
- Health 41%

GDPI - Classwise Split (Karnataka)

- Marine 2%
- Property 9%
- Motor 36%
- Misc 18%
- Health 35%

In this context, organisations like BCIC can play a vital role in expanding the spread and increasing the penetration of Insurance and Risk Management. In conjunction with the insurance industry, BCIC must endeavour to demystify insurance for its members and ensure that its members are well informed about latest developments & intricacies of insurance and its important benefits.

There are many steps which can be taken, some of which are;

1. Creating a knowledge repository for Risk Management and Insurance which can be readily accessed by all the members.

2. Holding seminars on insurance to educate and enable the members to extract maximum utility from latest insurance products and processes.

3. Facilitate benchmarking of global best practices in insurance and risk management.

Incidentally, the Insurance Regulator IRDA has tasked the insurance companies to follow the banking industry's model of adopting Individual states as "Lead Insurers". BCIC should grab this opportunity by forging partnerships with these IRDA designated lead insurers for the state of Karnataka.

BCIC deserves a lot of praise for already taking a great step in this direction by proposing to hold an Insurance Seminar in the near future.

INDUSTRY INSURANCE

KRS (as he is known) occupies an unique position in the Indian Insurance Industry with his tremendous experience, expertise and deep understanding of BOTH Life and Non-Life insurance domain. On top of that, he has also led and executed large complex Information Technology programs both in Life and Non-Life. As the COO, he has set up the operations and IT of two Greenfield Life insurance companies, one of which is a major Tied channel company and the other is a very big bancassurance venture of Canara bank and HSBC. KRS has championed Quality management initiatives like Six Sigma and ISO 9000. He has worked extensively in Enterprise Risk Management, Corporate Governance and Customer Service. He has trained thousands of executives in General Insurance including batches of Direct Recruits of National Insurance. He has also extensively trained MBAs from Premier institutes recruited by an IT company for their Insurance vertical. He has been a visiting faculty at the IIM Bangalore.

KRS is an alumnus of the Indian Institute of Management, Kolkata.

Article 3

Ways to Make Yourself a Motivated Human!

Abstract

" The article is a write-up about how I've stayed self-motivated, also many times influenced by wise thoughts of people who have seen life in all its twists and turns and remained grounded, successful and etched in the memories of many as **BEAUTIFUL people!** "

Ms. Tara Ravindran
Director
Wealthmax Group of Companies

Over the years of my life I've often reflected on the values that could make me a good human being and at the same time not being taken for granted for my goodness.

I have penned down over the years my thoughts/points on how to keep myself motivated, remain good, stay useful to the society, deliver fruitfully to the company, keep strongly bonded to values and to care and love my family as best as is possible.

These thoughts and intentions of mine has made jot down what makes me what Iam:

WAYS TO MAKE YOURSELF A MOTIVATED HUMAN!

- Remember that leadership isn't about your position. It's about your influence.
- Lift people up versus tearing people down.
- Protect your good name. An impeccable reputation takes a lifetime to build. And 60 seconds to lose.
- Surround yourself with positive, ethical people who are committed to excellence.
- Remember that even a 1% daily innovation rate amounts to at least a 100% rate of innovation in 100 days.
- Believe in your dreams (even when others laugh at them).
- Measure your success, not by your net worth but by your self worth (and how happy you feel).
- Take an intelligent risk every 24 hours. No try - No Win.
- Regardless of your title at work, be a team builder.
- Remember that business is all about relationships and human connections.
- Say "please" and "thank you" more.
- Know the five things that need to happen by the end of this year for you to feel its been your best year yet.
- Be willing to fail. It's the price of greatness.
- Focus less on making money and more on creating value.
- Spend less, save more.
- Leave everything you touch better than you found it.
- Run your own race.
- Stay true to your deepest values and best ideals.
- Be a problem solver versus a trouble maker.
- Rather than doing many things at mediocrity do just a few things-but at mastery.
- Honour your parents.
- Commit to doing great work whether anyone notices it or not. It's one of life's best sources of happiness.
- Give more than you receive (another of the truths of happiness).
- Be patient. Slow and steady wins the race. The only reason businesses that went from zero to a billion in a year or two get featured in magazines is because 99% of businesses require a lot more time to win.
- Under promise and then overdeliver.

Article 3

- See part of your job as "a developer of people" (whether you work in the boardroom or the mailroom).
- Wear your heart on your sleeve. When people see you're real, they'll fall in love with you.
- Be authentic versus plastic.
- Remember that life wants you to win. So get out of your own way.
- Consider that behind every fear lives your next level of growth (and power).
- Demand the best from yourself.
- Remember that the more you go to your limits, the more your limits will expand.
- See everything that happens to you as an opportunity to grow (and therefore, as a precious gift).
- Be obsessed with learning and self-development.
- Become comfortable alone (you are the only person you get to be with your whole life).
- Smile. It's a stunningly effective way to win in business and life.
- Reflect on the shortness of life.
- Be bold when it comes to your dreams but gentle with those you love.
- Remember that success is dangerous because it can kill drive/innovation/passion and going the extra mile. Be successful yet stay hungry.
- Be of deep value to this world.
- Own beautiful things but don't let them own you.
- Use excellent words.
- Laugh more.
- Don't complain, gossip or be negative.
- Plan as if you'll live forever but live as if you'll die tomorrow.

To sum up my thoughts, the wise words from Mr. Ratan Tata some years back touched me deeply – so well and beautifully said! which I share with you:

" *TRUE FACTS OF LIFE TO TRUE SUCCESS* "
By Ratan Tata

1. Don't educate your children to be *Rich*. Educate them to be *Happy*. So when they grow up *they will know the value of things and not their price.*

2. Eat your food as your medicines. Otherwise you have to eat medicines as your food.

3. The one who loves you will never leave you because even if there are *100 reasons* to give up he/she will find *1 reason* to hold on.

4. You are loved when you are born. You will be loved when you die. In between you have to manage.

5. If you want to walk fast, walk alone….! If you want to walk far, walk together….!!!

6. Six best doctors in the world - *Sunlight, rest, exercise, diet, self-confidance and friends*. Maintain them in all stages of life and enjoy healthy life.

7. If you see the *Moon*…. you see the *Beauty of God*…. if you see the *Sun*…., you see the *Power of God*….and. if you see the *Mirror*…. you see the *Best Creation of God*. So believe in yourself.

8. There is a lot of difference between *Human being* and being *Human*. A Few understand it.

9. We all are tourists and God is our travel agent who already fixed all our routes, reservations & destinations. So trust him & enjoy the trip called *Life*.

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