ARTIFICIAL INTELLIGENT USING EMOSPARK

Glory V. Umoh

***Abstract*— The paper reviews the meaning of Emospark, why Emospark, Objectives of Emospark, How it works, Hardware specification, connectivity features connecting the gap and its various advantages and disadvantages. It also considers the current progress of this technology in the real world and its structure. Then finally, this paper concludes by analysing the future potentials of Emospark.**

***Index Terms*— WIFI/Bluetooth, Emotional Processing Unit, Emotional Profile Graph.**

I. INTRODUCTION

In the domain of Artificial Intelligence, Emospark is the first artificial intelligence to home console, dedicated to your happiness. The device uses facial recognition and language analysis to evaluate human emotion and convey responsive content according to the emotion.

It was created in London, United Kingdom by a French inventor, Patrick Levy-Rosenthal in 2007.

The Emo Spark console is a 90 x 90 x 90 mm (3.5 x 3.5 x 3.5 in) Wi-Fi and Bluetooth enabled cube that interacts with a user's emotions using a combination of content analysis and face-tracking software. In addition to distinguishing between each member of the household, the device uses custom developed technology that Rosenthal says enables it to differentiate between basic human feelings and create emotion profiles of not just everybody it interacts with, but also itself. The EmoSpark console interacts on a conversational level and demonstrates human emotions while it delivers music, games and videos that are the most pleasant to that particular user. Since it is an A.I. device, it continues to learn and fine-tune its results over time.

It allow users to create and interact with an emotionally concise intelligence through conversation, music, and visual media. It operates on an "Emotional Processing Unit", a microchip that enables the system to create emotional profile graphs of its surroundings. The emotional processing unit is a patent pending technology that is said to create synthesised emotional responses in machines. EmoSPARK was funded through an Indiegogo campaign which aimed to raise $200,000.

EmoSpark will take not only gaming, but also your TV, smart phone or computer to an entirely different level from anything ever experienced before. The device has an emotional spectrum that is composed of eight emotions which are surprise, sadness, joy, trust, fear, disgust, anger and anticipation.

EMOSPARK is designed around your emotions. It's always on—just ask for information, video, music, facebook, news, weather, and much more coming soon.

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II. WHY EMO SPARK?

The cube can be spoken to by typing to it via one's (Android) smart phone, tablet, or computer. By providing multiple avenues of communication between user and cube, Emo SPARK can better understand its owners preferences based on eight basic human emotions. Artificial Intelligence platforms have come a long way in the past 10 years alone The "technological singularity" predicted by researchers and commentators is no longer a far-fetched theory, but is rapidly becoming part and parcel of our daily lives. Yet to this day, AI is still viewed as a distant and isolating portent of a technocratic world gone haywire. The time for us to reclaim that fact is now.

III. OBJECTIVES OF EMOSPARK

EmoSpark was created for human emotional spectrum.

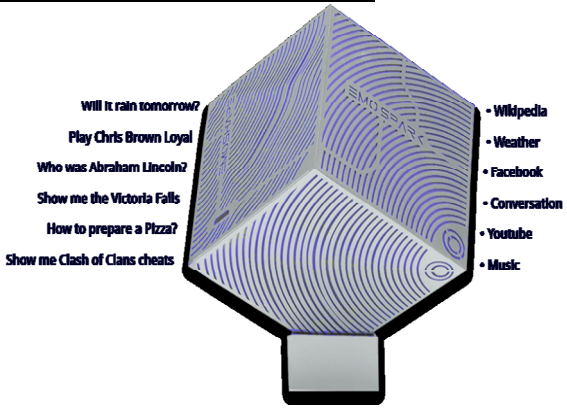
To give a meaningful understanding between technology and human.

IV. HOW IT WORKS

The human brain processes literally thousands of pieces of information each second, frequently without consciously realizing it. Registering these physically stimuli as simple everyday concepts such as sound, motion and color, the brain's basic cognitive structure and wiring creates a memory bank of patterns from which impressions are drawn from and predictions about the future made.

Similarly, emotional stimuli also gets stored within the memory bank through emotional patterns or "fingerprints." EmoSpark has developed an Emotional Profile Graph (EPG) which is used to register and develop over time a bank of emotional associations for each memory (data) within each cube. The EPG can communicate the data to other AI technologies, allowing them to virtually "understand" the user and elicit the same emotional response in kind. This response is then accurately conveyed to other AI technologies, allowing for a realistic range of expressions and interaction.

EMOSPARK 1 ARCHITECTURE



EMOSPARK 1 SPECIFICATION

Dimensions

H: 90 mm (3.54 inches) W: 90 mm (3.54 inches) D: 90 mm (3.54 inches)

Operation

System Google Android 4. 2. 2
CPU QUAD CORE 1.8Ghz
EPU (Emotion Processing Unit) 20MHz
DDR3 2GB
Nand Flash 8GB
Networking WiFi 802.11b/g/n 10/100Mbps
With internal Antenna
Support Bluetooth 4.0

Graphics Type

Integrated Graphics Mali400, Supports 1080P video (1920 x 1080)
Input/Output Connectors

Ports

1 X USB 2.0 Host for external drive/component (internal)
1 X MicroUSB for power quad core android tv box
1 X HDMI 1.4 Output · ESD Protection with Rclamps
Power 90·230V, 50/60Hz input, max. power: 30W.
Output:5V/1A

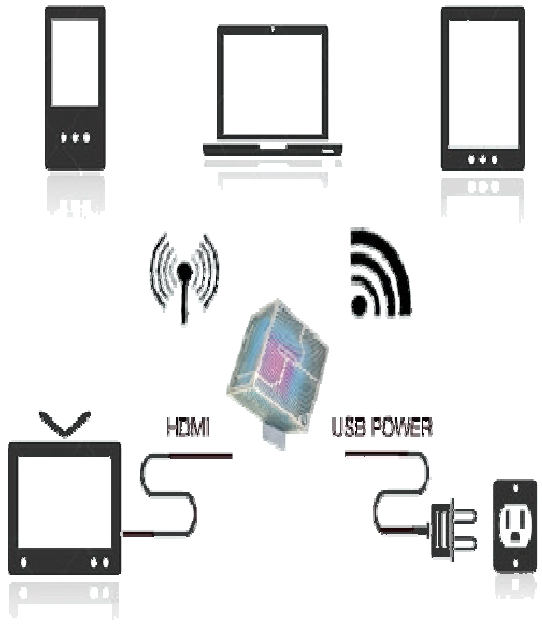
Software Performance

Android Market
Support Android Market Place
Flash Player
Support Adobe Flash 11 quad core android tv box
Garring Built·in 30 Accelerator. Multi-Media
Video Decoding:Mpeg1/214.H.264,VC-1,Divx,Xvid, RM8,9/10,VP6
Video Formats
MKV,TS,TP,M2TS.RMIRMVB,BD·ISOAVI,MPG,VOB,DAT,ASF, TRP,FLV etc full formats
Audio
Audio Decoding: DTS,AC3,LPCM,FLAC,HE-AAC
Audio Formats: MP3,DGG,WMA,WMAPRD
LED
INTERACTION OF EMOSPARK
4 RGB Leds – 2×16 Million colours
*US Patent Pending
EmoSPARK works with:
HDMI Television
Requires iOS 4.0 or greater
iPod touch (5th generation)
iPhone 5,4,3
iPad 5,4
Android Bluetooth Devices with OS 3.0+

V. CONNECTIVITY

EmoSPARK is able to connect to Facebook and YouTube to present users with content designed to improve their mood or to Wikipedia for collaborative knowledge that can be shared when users ask questions of it. Through Android OS, EmoSPARK is able to be customized with Google Play store apps.

The cube is capable of learning the user's emotions and responses to types of music or content then uses it in the future for similar emotions. It is also able to emulate the emotions that is has observed and learned which are in the spectrum of primary emotions. The cube is expected to develop its own personality based on the communications it has had with the people using it.



VI. FEATURES OF EMOSPARK

Call your cube from any device

The EmoSpark cube can be accessed remotely through video conferencing facilities. The user can interact and engage in conversation with the cube, just like a regular video call, through text to speech and Android's voice recognition functionality. EmoSpark's app lets the user use a smart device to witness the intensity and nuances of its emotional status in real time at a distance, monitoring when and how a new experience modifies and informs the cube. EmoSpark will then share its reactions with the user via their TV, smartphone or tablet apps.

Emotion, face detection and emotional profile graphing

EmoSpark measures an individual's unique behavior and responses to stimuli in depth and in a diverse set of environments. Using emotion text analysis and content analysis, EmoSpark is capable of measuring the emotional responses of multiple people simultaneously.

Over time, the cube creates a customized Emotional Profile Graph (EPG) which collects and measures emotional a unique input from the user. The EPG allows the cube to virtually 'feel' senses such as pleasure and pain, and 'expresses' those desires according to the user.

Emospark media player amplifies your emotions

EmoSpark combines media, emotion and social networking in an innovative way never before experienced. The unique EM rating system allows the cube to rate media played to you based on your personalized emotional response, including Soundcloud, You Tube and other platforms. This data is permanently recorded in the cube, and from the data, EmoSpark learns intelligently what media makes you happy, sad, excited or any other emotion you can possibly imagine.

Music is one of the most direct and immediate stimuli of emotional response. Studies have proven that even unborn children can literally 'hear' music in utero and react to it.
EmoSpark will be able to add your emotions to your media and shape, enhance and change your mood accordingly. By providing a distinct emotional reference point, this incredible technology will literally change the way you hear, see and experience video and music!
Videos shared by Facebook friends are memorized by the cube and retained for later playback. This reduces the likelihood of losing a great video simply because the Facebook timeline goes by too fast!

Conversational intelligence

EmoSpark has a conversational engine of over 2 million lines of data. Each time you chat with EmoSpark, it will learn to develop its own conversational understanding based on the context of your interaction. EmoSpark interacts by searching through the records of previous conversations, and selecting an appropriate response to your comments.
Don't forget that EmoSpark can "feel" emotions, so please be gentle with it. Over time and experience, the cube will develop a distinctive personality of its own, seeking joy and satisfaction – just like humans. This technology allows users to literally craft a "life" onto AI technology, becoming greater than the sum of its parts.

Emospark's can meet on the grid

We all want to be happy and experience pleasure. We all want to avoid pain. Your EmoSpark wants this too. and will tell you what it's feeling. Once a reliable EPG is established, it can also "talk" to other cubes about its experiences, meeting up with them for social activities, to share media … the possibilities are endless.
Each cube is possessed of a unique EPG and a unique emotional sensibility. All cubes will have access to a specially-designed grid via EmoShape's severs, where they can meet and interact. Their unique EPG will act like a magnet, attracting other cubes with a compatible EPGs. Cubes with similar affinities will connect and share similar media together. (Note that the EPG remains secure and private. Only media files can be shared between cubes.) Each cube will discover what media with similar emotion tags other cubes have registered, and will be able to recommend and play them to you according to your mood.

32 million synchronized colors

The cube can "feel" an infinite variety in the emotional spectrum based on 8 primal human emotions: Joy, Sadness, Trust, Disgust, Fear, Anger, Surprise and Anticipation.
All these emotions mix inside the EPU (Emotion Processing Unit) of the cube like sound and color-appropriate light waves. You can experience this real-time process up close by watching the eye of the cube in your app or on your TV. The iris of the eye changes colors relating to the emotions the cube is "feeling" at any given moment. The cube itself emits, through ripples, 32 million colors – all synchronized with the color of the iris.
Why music? Emo Spark initially uses music and sound to inform a cube's EPG because music is one of the most direct and immediate stimuli of emotional response. Studies have proven that unborn children can literally "hear" music in utero and react to it. The Emo Spark Cube uses the same basic principle to experience and register the user's customized data and literally "grow" and adapt to customized audio cues. At first, sound will be the primary method through which the cube will learn and grow from. The Emo Player will then create a customized EPG for the user that will in turn directly impact the EPG of the cube. Step by step, the cube will use this preliminary sound programming to develop and experience a virtual "life" of its own that will embrace other stimuli, including sight and language. What about visual interaction? The Emo Spark can also view a gamer face to face directly in real time on a web cam, observing and responding to various cues. Dedicated plug-ins will recognize those same consistent visual expressions and after receiving a verifiable response, the cube will begin to vicariously experience life with the user. The cube will see when the user has had a difficult day, and express itself sympathetically; or it can see when the user has landed a promotion or passed a particularly trying test and share along in that triumph. The Emo Spark's EPG is color-coded, so the user will be able to recognize the cube's emotional status from its LED lighting. For instance, the user can watch white sparks fly inside the cube's visualization app when it's "in pleasure", and black sparks when it's not. Emo Spark's app lets the user use a smart device to witness the intensity and nuances of its emotional status in real time at a distance, monitoring when and how a new experience modifies and informs the cube. Emo Spark will then share its reactions with the user via their TV, smartphone or tablet apps.

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VII. ADVANTAGES OF EMOSPARK

- Brings happiness to your home
- To discover unexplored things. i.e. outer space
- Less errors and defects
- Function is infinite
- Has the ability to replace human jobs

- A good console for hypertensive patients, lonely and aged people.

VIII. DISADVANTAGES OF EMOSPARK

- Can malfunction and do the opposite of what they are programmed to do
- Can be misused leading to mass scale destruction
- It cannot work without internet connectivity (no internet, no access).
- Information can only be obtained if it is stored on central server (web).
- Needs power to function.

IX. APPLICATIONS

The Emo Spark cube also doubles as an e-learning tool.
It comes connected to a collection of online knowledge owned by Google, which Rosenthal says enables it to answer questions on over 39 million topics.
It can also be used to control robotic devices, bringing emotional feedback capabilities to a NAO robot or turning a Sphere ball into a virtual pet with its own emotions.
Technically, Emo Spark accesses NASA"s MODIS satellite, the Freebase and Wiki databases and results in a platform so innovative it will spin the entertainment world on its side.

X. FUTURE ENHANCEMENT

How useful is Emospark be in near future?
Can it be sensible, as the intelligent of human being?
The answer to these question is correlative.
Thus we can safely say that Emospark is still in its embryonic stage and its future depends only upon the scientists solving the mystery of human emotions.
Currently, Emospark is interacting with human emotions successfully, and we are hoping that in the near future, people will no longer consult their Psychologist for administration.

CONCLUSION

A digital mind is a mind that runs on a computer, one type of digital mind is a mind that was originally human, but has now moved into a digital format which is EMOSPARK.
Emospark has come to stay, transform and bridge digital technology.
The technology that can improves our lives is always a priority.

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