STACS MAGAZINE

DEPARTMENT OF CSE

KiTE

2017-2018

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Vision and Mission statements of the Institute

EN VISION ED FUTURE "MORE GENIUS PER GENIUS"

To be recognized as the #1 engineering institutions regionally and nationally by all stakeholders including employers, faculty and society

CORE MISSION QUESTION- HOW CAN WE MAXIMIZE LEARNER TRANSFORMATION IN 10,440 HOURS?

We are coresponsible for producing remarkable behavioral traits such as deep enquiry (self generated questions, curiosity, research), an intrinsic desire for uncomfortable struggle (for employable skills, specific interests, big ideas) and an inclusive mindset (real world projects, collaboration, compassion)

Vision and Mission statements of the Department of Computer Science and Engineering

Vision

To promote industry embedded education there by creating computer science Professionals with exceptional intellectual skills that has a transformative impact on the soceity.

Mission

- To inculcade a remarkable behavioral traits and industry embedded research, leading to face uncomfortable struggle
- To foster the spirit of deep enquiry and imagination among students by bringing the curiosity to come up with innovative ideas for well-being of the society
- To fasten with individuals and organizations for realizing supreme potential for solving real-world problems

Programme Educational Objective (PEO)

PEO1: To enable graduates to pursue higher education and research, or have a successful career in industries associated with Computer Science and Engineering, or as entrepreneurs.

PEO2: To ensure that graduates will have the ability and attitude to adapt to emerging technological changes.

PEO3: To attain professional skills by ensuring life-long learning with a sense of social values.

Programme Outcomes (POs)

At the time of graduation, the students of Computer Science and Engineering should have the

PO1 ENGINEERING KNOWLEDGE: Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

PO2 PROBLEM ANALYSIS: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3 DESIGN /DEVELOPMENT: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4 CONDUCT INVESTIGATIONS OF COMPLEX PROBLEMS: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5 MODERN TOOL USAGE: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6 THE ENGINEER AND SOCIETY: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7 ENVIRONMENT & SUSTAINABILITY: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8 ETHICS: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9 INDIVIDUAL AND TEAM WORK: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings**.**

PO10 COMMUNICATION: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11 PROJECT MANAGEMENT AND FINANCE: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one‘s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12 LIFE LONG LEARNING: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

About The Department:

- Computer science is at the forefront of the digital revolution that continues to define the 21st century.

- It helped introduce innovations like the smartphone and the ‘gig’ economy. In future, computer scientists are expected to completely reshape the world we live in with technologies like Augmented Reality, the Internet of Things, and distributed ledgers like Blockchain.

- At KGiSL, CSE department is committed to develop young minds to make creative engineers in industries, business and to play a positive and useful role in social transformation.

- Our department offers its students the very best exposure in terms of technology, infrastructure and resources.

- The college lays great emphasis on Industry-Embedded quality education. Its unique learning approach is designed to contribute significantly to the growth and development of each and every student.

- CSE department has been in the forefront in recognizing the needs of the industry and integrating knowledge with professional inputs.

- The final goal is achieved through our unyielding efforts to enhance Quality in Industry Embedded Education, Research and Diversity in order to serve the society at large.

Articles

Arduino Ethernet Board Programming

Roshini.S of 3rd year CSE-B

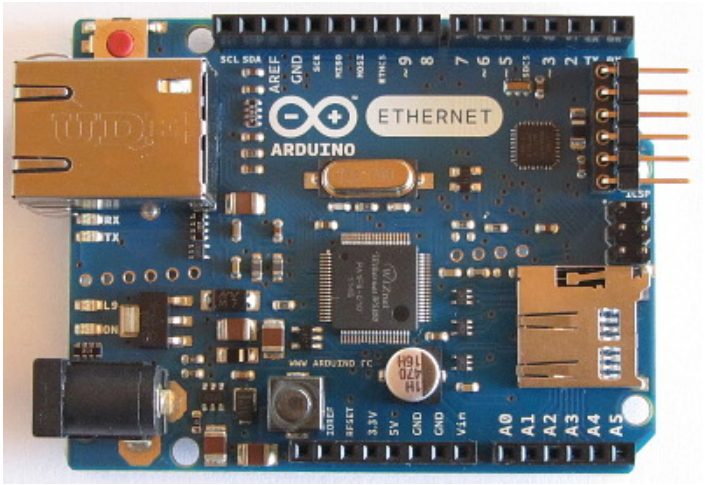
Uno and Ethernet shield, but without USB. This article shows how to program, test and use the Arduino Ethernet board and what accessories are needed.

We now compare the Arduino Ethernet board with an Arduino Uno and Ethernet shield. It shows the Arduino Ethernet board being programmed and used in a stand-alone configuration with an external power supply.

Arduino Ethernet Board

The Arduino Ethernet board is shown below. It has an RJ45 Ethernet connector, power connector, connector for an external USB board for programming and micro SD card socket.

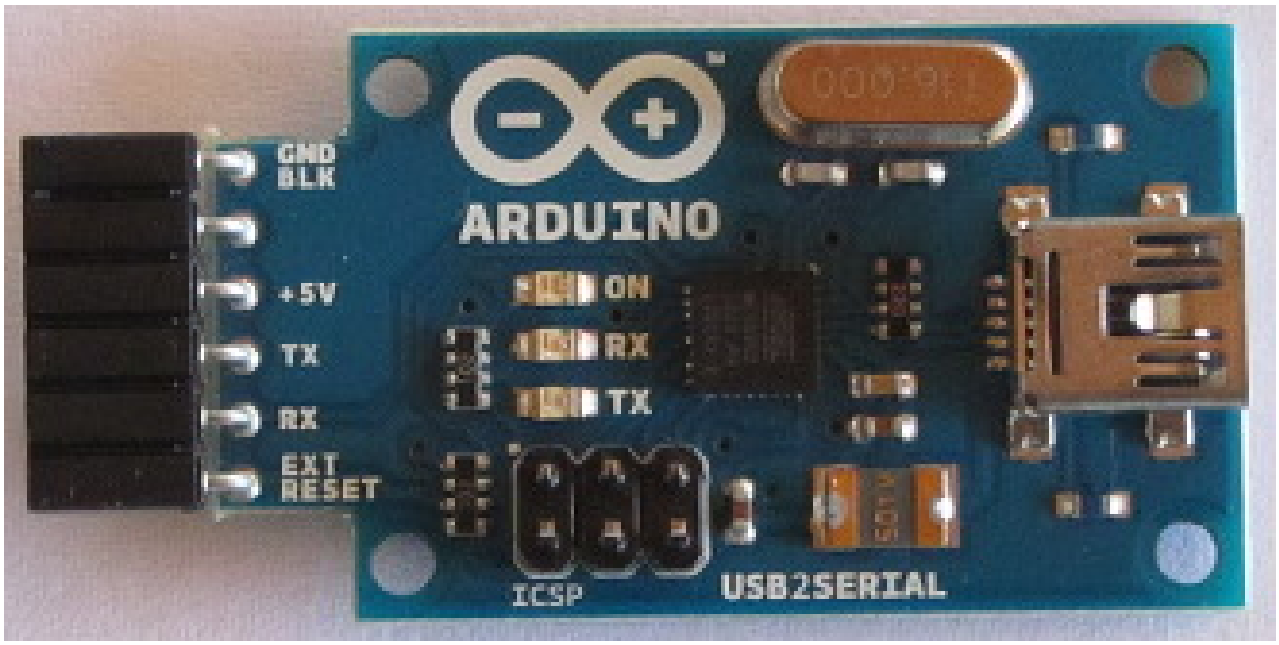
It is important to note that the board does not have USB on-board.



USB2SERIAL Board

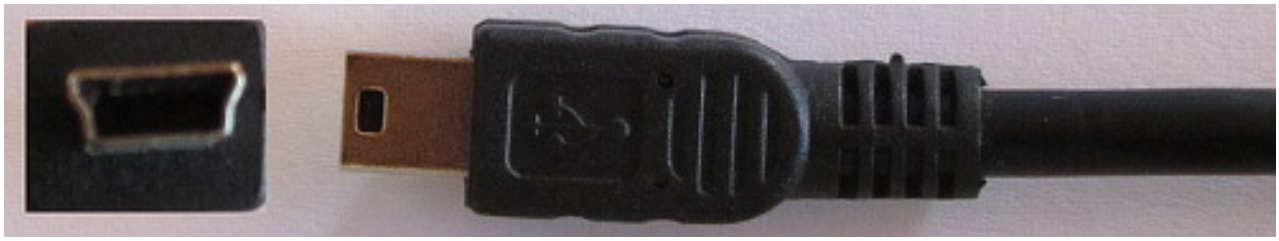
An external USB to serial board is required to program the Arduino Ethernet board, such as the Arduino USB2SERIAL board.

The USB2SERIAL board also supplies power to the Arduino Ethernet board so that no external power is required while developing software and while the USB2SERIAL board is plugged in.



Mini USB Cable

The USB2SERIAL board connects to a host computer using a USB Mini Cable. The USB Mini Cable has a miniature connector unlike the standard USB cable required for the Arduino Uno.



Tesla Tower

Kishore Raj .R.R of 2nd year CSE-A

In 1905, a team of construction workers in the small village of Shoreham, New York labored to erect a truly extraordinary structure. Over a period of several years the men had managed to assemble the framework and wiring for the 187-foot-tall Wardenclyffe Tower, in spite of severe budget shortfalls and a few engineering snags. The project was overseen by its designer, the eccentric-yet-ingenious inventor Nikola Tesla (10 July 1856 – 7 January 1943). Atop his tower was perched a fifty-five ton dome of conductive metals, and beneath it stretched an iron root system that penetrated more than 300 feet into the Earth's crust. "In this system that I have invented, it is necessary for the machine to get a grip of the earth," he explained, "otherwise it cannot shake the earth. It has to have a grip... so that the whole of this globe can quiver."

Back at his makeshift laboratory at Pike's Peak in Colorado Springs, the eccentric scientist continued to wring the secrets out of electromagnetism to further explore this possibility. He rigged his equipment with the intent to produce the first lightning-scale electrical discharges ever accomplished by mankind, a feat which would allow him to test many of his theories about the conductivity of the Earth and the sky. For this purpose he erected a 142-foot mast on his laboratory roof, with a copper sphere on the tip. The tower's substantial wiring was then routed through an exceptionally large high-voltage Tesla coil in the laboratory below. On the night of his experiment, following a one-second test charge which momentarily set the night alight with an eerie blue hum, Tesla ordered his assistant to fully electrify the tower.

GAMING IMPACT ON BRAIN

Karthick .S.R of 2nd year CSE-A

Scientists have collected and summarized studies looking at how video games can shape our brains and behavior. Research to date suggests that playing video games can change the brain regions responsible for attention and visuospatial skills and make them more efficient. The researchers also looked at studies exploring brain regions associated with the reward system, and how these are related to video game addiction.Scientists have collected and summarized studies looking at how video games can shape our brains and behavior.

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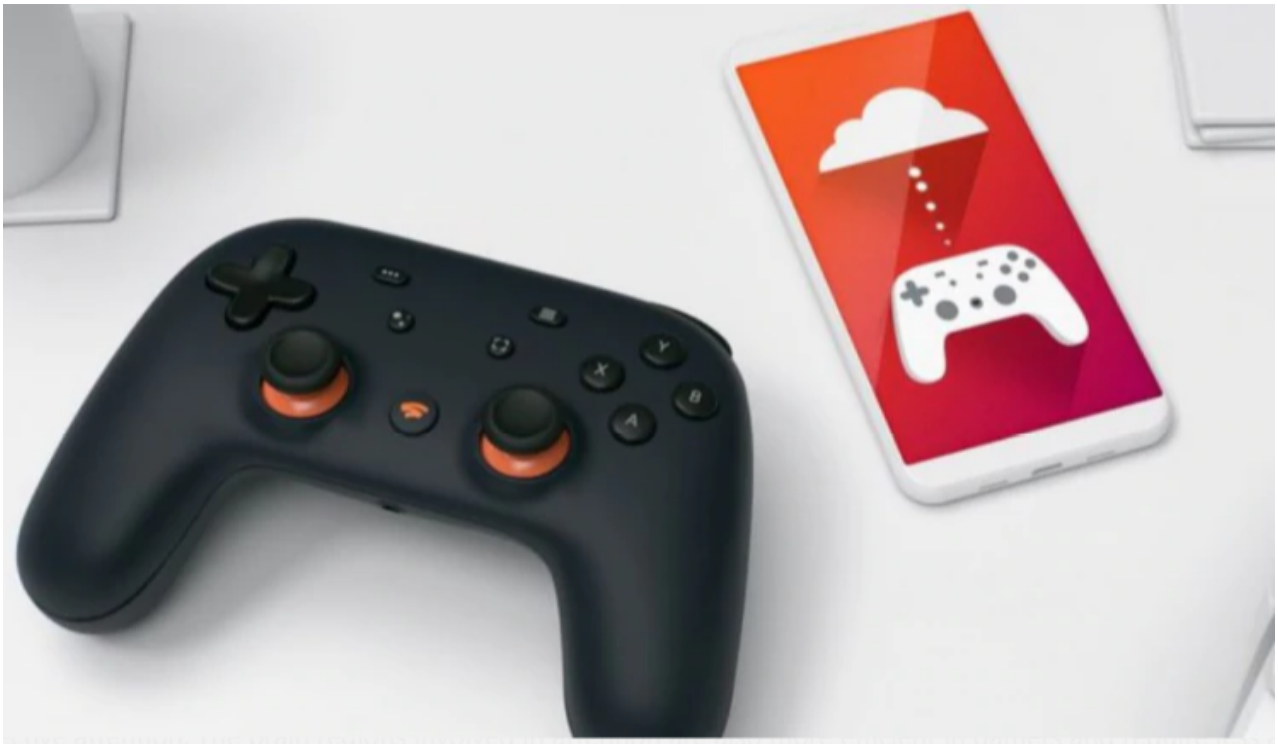
There is also evidence that video games can increase the size and efficiency of brain regions related to visuospatial skills. For example, the right hippocampus was enlarged in both long-term gamers and volunteers following a video game training program.



The studies show that playing video games can change how our brains perform, and even their structure. For example, playing video games affects our attention, and some studies found that gamers show improvements in several types of attention, such as sustained attention or selective attention. The brain regions involved in attention are also more efficient in gamers and require less activation to sustain attention on demanding tasks.

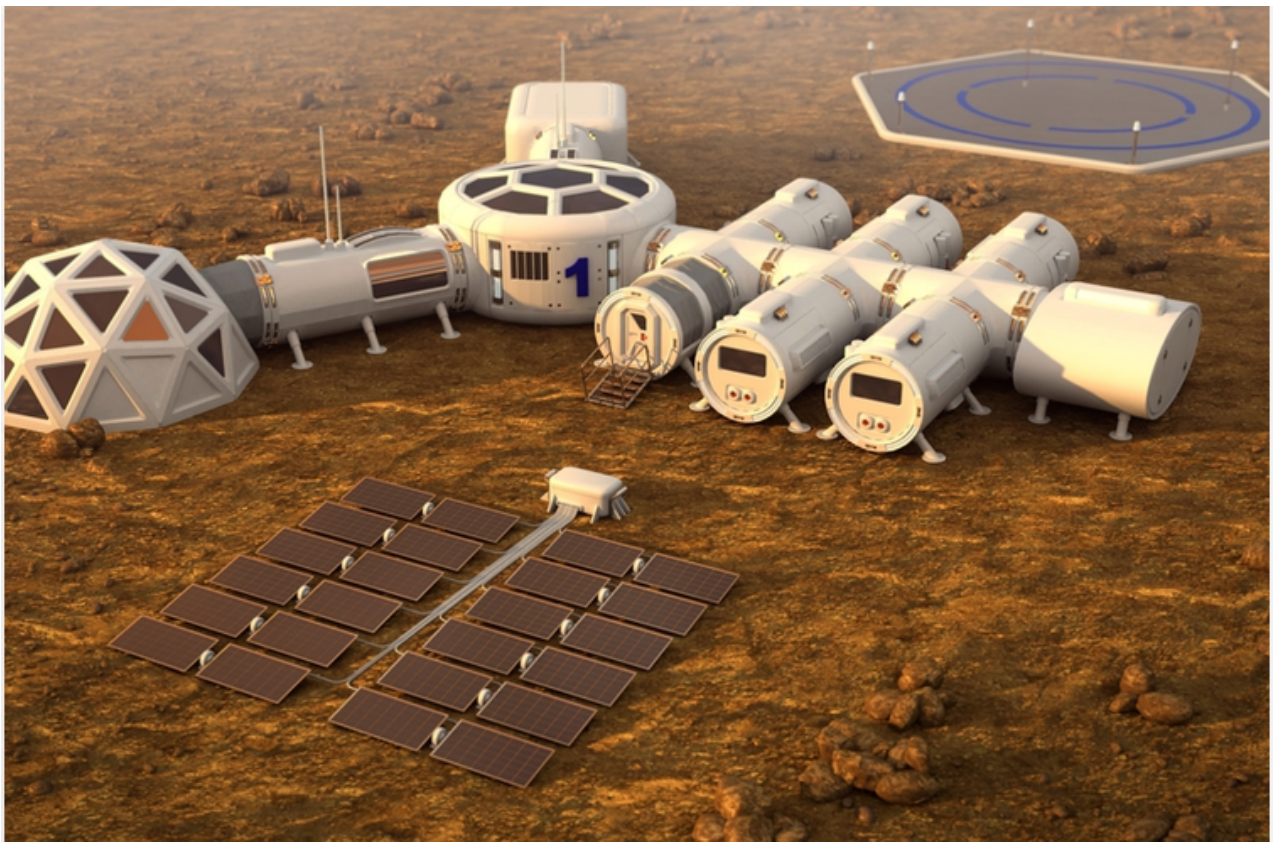
So, what do all these brain changes mean? "We focused on how the brain reacts to video game exposure, but these effects do not always translate to real-life changes," says Palaus.

Colonization of Mars

Mission concepts and timelines

Suchithra Priyadharshini.K of 3rd year CSE-B

Since the 20th century, there have been several proposed human missions to Mars both by government agencies and private companies.



All of the human mission concepts as currently conceived by national governmental space programs would not be direct precursors to colonization. Programs such as those being tentatively planned by NASA, Roscosmos, and ESA are intended solely as exploration missions, with the establishment of a permanent base possible but not yet a main goal.

Surface gravity of Mars is 38% that of Earth. Although microgravity is known to cause health problems such as muscle loss and bone demineralization,

Relative similarity to Earth

Earth is similar to Venus in bulk composition, size and surface gravity, but Mars' similarities to Earth are more compelling when considering colonization. These include:

- The Martian day is very close in duration to Earth's. A solar day on Mars is 24 hours, 39 minutes and 35.244 seconds.
- Mars has a surface area that is 28.4% of Earth's, which is only slightly less than the amount of dry land on Earth (which is 29.2% of Earth's surface). Mars has half the radius of Earth and only one-tenth the mass. This means that it has a smaller volume (~15%) and lower average density than Earth.

Equipment needed for colonization

- Basic utilities (oxygen, power, local communications, waste disposal, sanitation and water recycling)
- Habitats
- Storage facilities
- Shop workspaces
- Airlock, for pressurization and dust management
- Resource extraction equipment—initially for water and oxygen, later for a wider cross section of minerals, building materials, etc.
- Equipment for energy production and energy storage, some solar and perhaps nuclear as well