



PRAGATI ENGINEERING COLLEGE (AUTONOMOUS)

Approved by ACITE, New Delhi & Permanently Affiliated to JNTUK, Kakinada
& Accredited By NAAC with 'A' Grade

SUTANTRA

- INFORMATION FOR ENLIGHTENING

DEPARTMENT OF
INFORMATION TECHNOLOGY

June - 2020



About IT department

The Department of IT was established in the year 2001 to groom the students for the requirements of IT industry. The Department has emerged as a reputed center of learning in the coastal districts of Andhra Pradesh. Footprints of the department's students can be found in most of the local and global software majors. Student of this department mainly, brought glory to the college by securing University Rank.

The department strives to empower the students, to achieve the demanding standards of IT industry, by bringing about a synergistic academic environment wherein cutting edge technologies, industry experts, faculty and students are engaged in a sustained interaction.

Vision of the College

To Emerge as a Premier Institution for Technical Education in the Country through Academic Excellence and to be Recognized as a Center for Excellence in Research & Development, catering to the needs of our Country.

Mission of the College

To realize a strong Institution by consistently maintaining State-of-art-infrastructure and building a cohesive, World Class Team and provide need based Technical Education, Research and Development through enhanced Industry Interaction.

Department Vision

To attain academic excellence in the field of Information Technology and research serving to the needs of the society through technological developments.

Department Mission

- To create stimulating learning ambiance by providing state-of-art infrastructure and to induce innovative and problem-solving capabilities to address societal challenges.
- To impart quality technical education with professional team to make the graduates globally competent to IT Enabled Services.
- To strengthen industry-academia relationship for enhancing research capabilities.



PEOs for B.Tech IT Programme

PEO1:

Students will have successful career in IT as researchers, entrepreneurs and IT professionals satisfying the needs of the society.

PEO2:

Students will exhibit inclination towards higher education and continuous learning process.

PEO3:

Students will practice ethical behavior in IT industry with effective soft skills essential to work in teams.

PSOs for B.Tech IT Programme

PSO1:

Develop software programs in various programming languages learnt to create the software applications to solve the real life problems of the society.

PSO2:

Excel in emerging software tools and technologies.

PSO3:

Effectively transform their ideas and bring consensus for the transformation of the idea into a usable software product / application.



Program Outcomes (POs)

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. 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.
3. Design/development of solutions: 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.
4. 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.
5. 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.
6. 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.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. 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.



John McCarthy



John McCarthy (September 4, 1927 – October 24, 2011) was an American computer scientist and cognitive scientist. McCarthy was one of the founders of the discipline of artificial intelligence. He co-authored the document that coined the term "artificial intelligence" (AI), developed the Lisp programming language family, significantly influenced the design of the ALGOL programming language, popularized time-sharing, invented garbage collection, and was very influential in the early development of AI.

He received many accolades and honors, such as the 1971 Turing Award for his contributions to the topic of AI, the United States National Medal of Science, and the Kyoto Prize.

McCarthy often commented on world affairs on the Usenet forums. Some of his ideas can be found in his sustainability Web page, which is "aimed at showing that human material progress is desirable and sustainable". McCarthy was a serious book reader, an optimist, and a staunch supporter of free speech.

McCarthy saw the importance of mathematics and mathematics education. His Usenet .sig for years was, "He who refuses to do arithmetic is doomed to talk nonsense"; his license plate cover read, similarly, "Do the arithmetic or be doomed to talk nonsense."

His 2001 short story "The Robot and the Baby" farcically explored the question of whether robots should have (or simulate having) emotions, and anticipated aspects of Internet culture and social networking that have become increasingly prominent during ensuing decades.

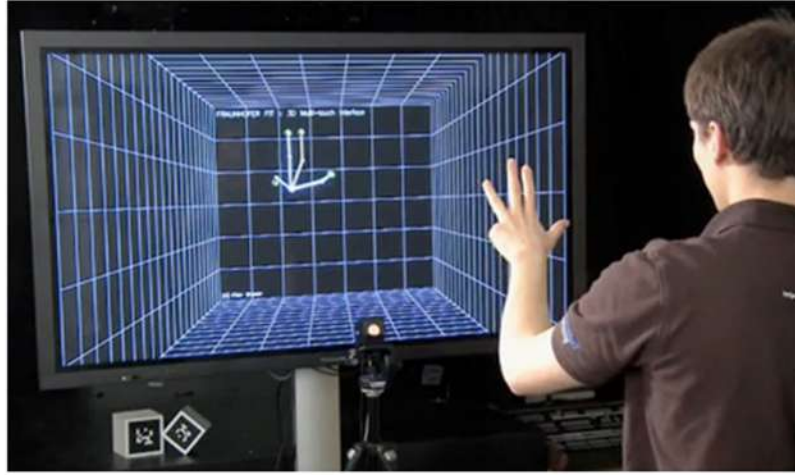
Honors and awards of John McCarthy

1. Turing Award from the Association for Computing Machinery (1971).
2. Kyoto Prize (1988).
3. National Medal of Science (USA) in Mathematical, Statistical, and Computational Sciences (1990).
4. Inducted as a Fellow of the Computer History Museum "for his co-founding of the fields of Artificial Intelligence (AI) and timesharing systems, and for major contributions to mathematics and computer science". (1999)
5. Benjamin Franklin Medal in Computer and Cognitive Science from the Franklin Institute (2003).
6. Inducted into IEEE Intelligent Systems' AI's Hall of Fame (2011), for the "significant contributions to the field of AI and intelligent systems".
7. Named as one of the 2012 Stanford Engineering Heroes.



SUTANTRA - Information for enlight

Touchless Touch



The touch less touch screen sounds like it would be nice and easy, however after closer examination it looks like it could be quite a workout. This unique screen is made by TouchKo, White Electronics Designs, and Groupe 3D. The screen resembles the Nintendo Wii without the Wii Controller. With the touch less touch screen your hand doesn't have to come in contact with the screen at all, it works by detecting your hand movements in front of it. This is a pretty unique and interesting invention, until you break out in a sweat. Now this technology doesn't compare to the hologram-like IO2 Technologies Heliodyisplay M3, but that's for anyone that has \$18,100 lying around.

Everybody loves a touch screen and when you get a gadget with touch screen the experience is really exhilarating. When the I-phone was introduced, everyone felt the same. But gradually, the exhilaration started fading. While using the phone with the finger tip or with the stylus the screen started getting lots of finger prints and scratches. When we use a screen protector; still dirty marks over such beautiful glossy screen is a strict no-no. Same thing happens with I-pod touch. . Most of the time we have to wipe the screen to get a better unobtrusive view of the screen. The device is based on optical pattern recognition using a solid state optical matrix sensor with a lens to detect hand motions. This sensor is then connected to a digital image processor, which interprets the patterns of motion and outputs the results as signals to control fixtures, appliances, machinery, or any device controllable through electrical signals.

Mrs. D Sirisha
Associate Professor & HoD

Education is what remains after one has forgotten
what one has learned in school. – Albert Einstein



Honey Pots

The Internet is growing fast and doubling its number of websites every 53 days and the number of people using the internet is also growing. Hence, global communication is getting more important every day. At the same time, computer crimes are also increasing. Countermeasures are developed to detect or prevent attacks - most of these measures are based on known facts, known attack patterns. Countermeasures such as firewalls and network intrusion detection systems are based on prevention, detection and reaction mechanism; but is there enough information about the enemy?

A honeypot is primarily an instrument for information gathering and learning. Its primary purpose is not to be an ambush for the blackhat community to catch them in action and to press charges against them. The focus lies on a silent collection of as much information as possible about their attack patterns, used programs, purpose of attack and the blackhat community itself. All this information is used to learn more about the blackhat proceedings and motives, as well as their technical knowledge and abilities. This is just a primary purpose of a honeypot.

There are a lot of other possibilities for a honeypot - divert hackers from productive systems or catch a hacker while conducting an attack are just two possible examples. They are not the perfect solution for solving or preventing computer crimes.

Honeypots are hard to maintain and they need operators with good knowledge about operating systems and network security. In the right hands, a honeypot can be an effective tool for information gathering. In the wrong, inexperienced hands, a honeypot can become another infiltrated machine and an instrument for the blackhat community.

Mrs. N V S Sowjanya
Assistant Professor

The more that you read, the more things you will know,
the more that you learn, the more places you'll go." – Dr. Seuss



5 Pen PC Technology

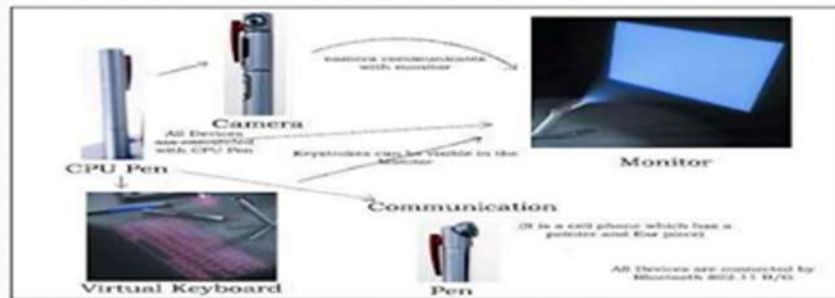
5 PEN PC TECHNOLOGY



5 Pen Pc Technology is developed by a Japanese Company NEC (Nippon Electric Company, Limited). It is designed by Tour Ichihashi. It has five major parts: CPU pen, communication pen, Projector pen, Camera pen and Virtual keyboard pen.

It is also known as P-ISM. P-ISMs are link to each other through wireless technology like Bluetooth. It can also uses the wi-fi Technology as well and provides facilities to develop computing environment anywhere.

Block diagram of P- ISM



Working of P-ISM

- P-ISM has five pen devices in which each device is connected with CPU pen.
- Camera pen is connected with Projector pen to establish communication between camera and display unit.
- Projector Pen is connected with Virtual keyboard pen so that keystrokes can be made visible on display.
- All components are connected by Bluetooth 802.11 B/G. Sometimes devices are also connected using wi-fi technology.

S.Sri Sai Yashwitha (17A31A1230)

“Live as if you were to die tomorrow.
Learn as if you were to live forever.” — Mahatma Gandhi



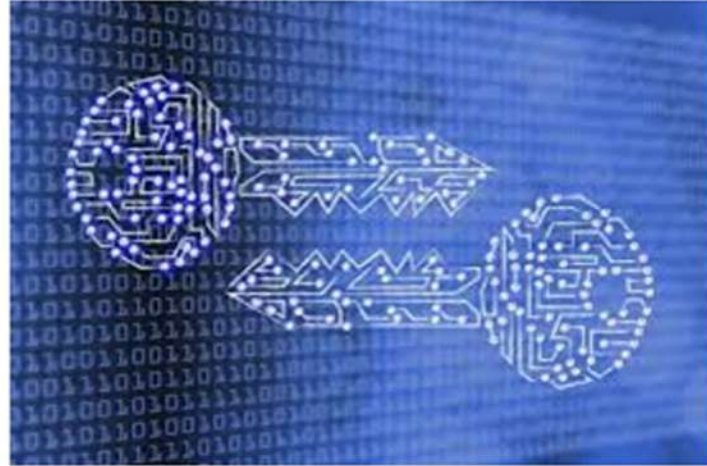
Unhackable Internet



An internet based on quantum physics will soon enable inherently secure communication. A team led by Stephanie Wehner, at Delft University of Technology, is building a network connecting four cities in the Netherlands entirely by means of quantum technology. Messages sent over this network will be unhackable. Nearly \$625 million in federal funding is expected to be allocated to the project. A quantum internet would be able to transmit large volumes of data across immense distances at a rate that exceeds the speed of light.

The five milestones include:

- Verification that the technology works over fiber networks. ...
- Distribution of entangled photons between locations within a city.
- Setting up quantum memory networks between two cities.
- Extending that interstate between cities using quantum repeaters to amplify signals.



K. Meghana (18A31A1211)

“Education without values, as useful as it is, seems rather to make man a more clever devil.” — C.S. Lewis



Virtual Reality (VR)



Virtual Reality (VR) is a computer-generated environment with scenes and objects that appear to be real, making the user feel they are immersed in their surroundings. This environment is perceived through a device known as a Virtual Reality headset or helmet. VR allows us to immerse ourselves in video games as if we were one of the characters, learn how to perform heart surgery or improve the quality of sports training to maximize performance.

DIFFERENCES WITH AUGMENTED REALITY

Despite being a technology that originated decades ago, many people are still unfamiliar with the concept of Virtual Reality. It is also quite common to confuse the term Virtual Reality with augmented reality.

The main difference between the two is that VR builds the world in which we immerse ourselves through a specific headset. It is fully immersive and everything we see is part of an environment artificially constructed through images, sounds, etc. On the other hand, in augmented reality (AR), our own world becomes the framework within which objects, images or similar are placed. Everything we see is in a real environment and it may not be strictly necessary to wear a headset. The clearest and most mainstream example of this concept is Pokémon Go.

MAIN APPLICATIONS OF VIRTUAL REALITY

Medicine, culture, education and architecture are some of the areas that have already taken advantage of this technology. From guided museum visits to the dissection of a muscle, VR allows us to cross boundaries that would otherwise be unimaginable.

G Shivani (18A31A1205)

“Education is not the filling of a pail, but the lighting of a fire.” — W.B. Yeats



Near Field Communication (NFC)

NFC stands for “Near Field Communication” and, as the name implies, it enables short-range communication between compatible devices

HOW DOES NFC WORKS?

Now that we know what NFC is, how does it work? Just like Bluetooth and Wi-Fi, and all manner of other wireless signals, NFC works on the principle of sending information over radio waves. Near Field Communication is another standard for wireless data transitions. This means that devices must adhere to certain specifications in order to communicate with each other properly. The technology used in NFC is based on older RFID (Radio-frequency identification) ideas, which used electromagnetic induction in order to transmit information.

Applications of Near Field Communication

1. Smart Cards

Payment using NFC integrated smart cards offers easier payment compared to conventional multiple step payment process. Top payment services like Visa and MasterCard are offering NFC embedded smart cards to customers

2. E-wallet (payment using smart phone)

Cashless payment system using mobile devices became popular in the beginning of this decade and more services are convenience. Using smart phone applications, payments.



A Satya Veera Manikanta (18A31A1238)

Develop a passion for learning. If you do,
you will never cease to grow. – Anthony J. D’Angelo



EDITORIAL BOARD

Faculty

Mrs. N V S Sowjanya
(Assistant Professor)

Mrs. T Ganga Bhavani
(Assistant Professor)

Student

K. Kota Pavana Supriya ,
III Year
(17A31A1212)

Ch. Lakshmi Sowjanya,
II Year
(18A31A1204)

A . Anusha
(19A31A1202)