

DEPARTMENT OF INSTRUMENTATION AND CONTROL ENGINEERING (EST.1972)

L. D. COLLEGE OF ENGINEERING (EST. 1948) AHMEDABAD

EDITION 3.0

JULY'19 - SEPT'19



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DEPARTMENT OF IC ENGINEERING NEWS LETTER

PRINCIPAL MESSAGE

Dear Students and Faculty Members,



L. D. College of Engineering is reputed as one of the institutes in the state where students as well as faculty members are given the best platform to perform. The remarkable talent and hard work of all, has resulted in getting accreditation of BE in Civil, Electrical and Mechanical Engineering. The Department of Instrumentation and Control Engineering is also applied for NBA for this year. I congratulate and appreciate the efforts of all involved in the process. The main focus of our institute in the coming days is going to be on Research and Innovation. SSIP funds can be utilized optimally to create PoCs with high industrial or social value. Patent and publication of the best projects, research and consultancy will be given priority. We will be conducting advanced and futuristic technology trainings and workshops by National and International experts. Simultaneously our students and faculties have been engaged very well in social, cultural and sports domains too. Induction program for first year students has been done commendably by all departments and we hope it has made our new aspirants comfortable on campus. I wish all will continue to work enthusiastically for achieving high standards of our beloved institute.

Dr. R.K. Gajjar , Principal, LDCE.

VISION AND MISSION OF INSTITUTE

Vision : To contribute for sustainable development of nation through achieving excellence in technical education and research while facilitating transformation of students into responsible citizens and competent professionals.

Mission :

- To impart affordable and quality education in order to meet the needs of industries and achieve excellence in teaching-learning process.
- To create a conducive research ambience that drives innovation and nurtures research-oriented scholars and outstanding professionals.
- To collaborate with other academic & research institutes as well as industries in order to strengthen education and multidisciplinary research.
- To promote equitable and harmonious growth of students, academicians, staff, society and industries, thereby becoming a center of excellence in technical education.
- To practice and encourage high standards of professional ethics, transparency and accountability.

HOD MESSAGE



The Department of Instrumentation and Control Engineering was established in the year 1972. At present department is offering B.E. course in Instrumentation and Control Engineering with intake capacity of 60 and M.E. in Applied Instrumentation with intake capacity of 18. The department was accredited by National Board of Accreditation for the period of 3 years from 2006 and reapplied in 2018 -19. The both UG and PG program is affiliated to GTU (Gujarat Technological University). The Department has a team of well qualified, experienced and committed staff members with a strong sense of ethical and professional responsibility. The department faculties has received their higher education from premier institute like IIT – Roorkee, IIT – Bombay, IISc - Bangalore, NIT-Trichy. The department faculty work with excellent team spirit in different technical domain like modern control, Signal Processing, Image Processing, Analog Electronics, VLSI and Embedded System, Process Control, Automation, Instrumentation which leads to good quality students projects and research publications in these areas. Department has five major laboratories and two center of excellence (CoE Labs) established by siemens. The department labs are equipped with software and equipment's for wide exposure of students in their practical works as per GTU syllabus.

Department committed to provide students an outcome based education through outcome based teaching and learning process. The department motivates both co-curricular and extracurricular activities, for the overall development of its students. Department has ISA student section to nurture technical and organizational skills among students. Students are also encouraged to apply from institute SSIP (student startup and Innovation policy) funding for development of PoC (Proof of concept).

Department students are actively participating technical and non-technical events at state, national and International level, which in turn gives them horizontal exposure to Engineering concepts and technology. The Department student Aninda Dey Sarkar and Ajay Vegad won national robotics competition at IIT Delhi among 108 teams including IITs, NITs, etc. They represented as Team India in International robotics competition ABU Robocon at Mongolia. This newsletter also covers students participation at Xtij organized by GTU, ME Dissertation summary of PG students, achievements of NCC-NSS, Students technical posters as well as technical articles by faculty. Department also started LDCE ISA student section and invited experts from academia and industry. Our placement records has always being very impressive, with the good number of students being placed year after year in highly reputed core companies and public sector units. on campus placemen of average 40 students in reputed companies with average salaries of around 3.5 to 4 lacs. Our alumni hold senior positions in industries as well as in academic institutions, both in India and abroad. This news letter provide details of activities and achievements of department.

Best wishes,

Dr. Manish Thakker,
Professor and Head, IC Engg. Department

DEPARTMENT VISION AND MISSION

Vision: Provide quality education and research environment for preparing competent Instrumentation and Control engineers to meet the technological challenges of industries and the society.

Mission:

- To impart quality education in the field of industrial automation to match the needs of industries.
- To encourage multi disciplinary research and innovative projects.
- To cultivate technocrats and entrepreneurs with professional skills and ethics.



Every year students are welcomed with orientation program. Students are introduced to environment of college, professors, curriculums, clubs, etc. During this program the newsletter 1.0 was launched. MoU was signed with chief guest Mr. Mitin Patel (Prima Automation) for student training, Industrial visits and placements.

Happiness is when what you think, what you say, and what you do are in harmony—Mahatma Gandhi



Induction program is conducted to create a bridge a bridge between school and college atmosphere. During Induction program students are taught moral and ethical values of life. There were different activities conducted for this. Activities includes sports like cricket, Kabbadi, etc. Art and craft activities like making best out of waste. Their Dental check up session was conducted to make them aware about oral health. To make students aware about SSIP program.

INSTRUMENTATION & CONTROL ENGG.– SUMMER TRAINING AND INTERNSHIP 2019		
Sr. No	Name of Students	Company
1	AJUDIYA NIRAV BHARATBHAI	GSECL
2	CHAUDHARI DAKSHKUMAR CHELJIBHAI	GSECL
3	KALATHIYA JENISHKUMAR BHUPATBHAI	GSECL
4	PANCHAL ANKITBHAI DINESHBHAI	GSECL
5	PARMAR MAYUR NATVARLAL	GSECL
6	PATEL HARDIKKUMAR MAHESHBHAI	GSECL
7	PRAJAPATI PARTH HARSHADBHAI	GSECL
8	ANTALA DARSHAN SURESHBHAI	ALLIANCE FIBRES LTD.
9	FINAVIYA HIRENKUMAR RAMESHBHAI	ALLIANCE FIBRES LTD.
10	JETHVA MISHALKUMAR RASIKBHAI	ALLIANCE FIBRES LTD.
11	KOYANI TEJAS MAHENDRABHAI	ALLIANCE FIBRES LTD.
12	BHALIYA JAIMIN VINUBHAI	GUJARAT HEAVY CHEMICALS LTD.
13	NAYAN BHOLA	GUJARAT HEAVY CHEMICALS LTD. & GSECL
14	NIHAR DHOKAI	GUJARAT HEAVY CHEMICALS LTD. & IOCL
15	VAGASIYA MEET KIRITBHAI	GUJARAT HEAVY CHEMICALS LTD.
16	KAMALIYA HARSHAD RAMESHBHAI	GUJARAT HEAVY CHEMICALS LTD.
17	CHAVADA PARIJEETSINH RAJENDRASINH	ONGC PETRO ADDITIONS LTD.
18	GADHETHARIYA ABHISHEK UPENDRABHAI	ONGC PETRO ADDITIONS LTD.
19	DEVMURARI YOGESH PARSOTAMBHAI	JAY USHIN LIMITED
20	GOHIL NAYANPALSINH BHAVSINHBHAI	ADANI
21	VALA VISHVADEEPSINH HARDEVSINH	ADANI
22	KHOTHARI KENIL KIRANBHAI	ADANI POWER
23	SOLANKI MALHARSINH ANIRUDDHSINH	ADANI POWER
24	KAPOOR KHUSHBOO KAPIL	SHREE SAI SERVICES AND ASCENT YARNS PVT. LTD.
25	KASVALA ASHISH MAHESHBHAI	ION EXCHANGE(INDIA) LTD.
26	PALKHIWALA SHUBHAM DARSHITKUMAR	IOCL
27	PARMAR JIGNESHKUMAR JAYENDRABHAI	UPL
28	SONAGARA ANKITKUMAR UKABHAI	UPL
29	PARMAR PRANAY NILESHKUMAR	GODREJ INDUSTRIES LTD.
30	PARMAR VISHAL RAMNIKLAL	LOXIM INDUSTRIES LTD.
31	PATEL BHAVIK BHARATBHAI	ELECTROTHERM (INDIA) LTD.
32	PIPALIYA DHAVAL JAVERBHAI	ELECTROTHERM (INDIA) LTD.
33	RATHOD DHRUV PARESHBHAI	ELECTROTHERM (INDIA) LTD.
34	PATEL FENIL DILIPKUMAR	IFFCO
35	PATEL TIRTH NAVNITKUMAR	IFFCO
36	SONI JAINISH MAHENDRAKUMAR	IFFCO

INSTRUMENTATION & CONTROL ENGG.- SUMMER TRAINING AND INTERNSHIP 2019

Sr. No	Name of Students	Company
37	SHAH PRIYAN DHARMESHKUMAR	GAIL(INDIA) LTD.
38	SHAH SHIVAM MITESHKUMAR	WINDSOR MACHINES LTD
39	VIVEKJYOTI BHOMWIK	NTPC LTD
40	KUMARE PRASHANT HEMANTBHAI	SOFCON TRAINING
41	PATEL PARTH VASHANTBHAI	SOFCON TRAINING
42	PATEL PREKSHA CHIRAGBHAI	SOFCON TRAINING
43	PATEL USHABEN BHUPENDRABHAI	SWASTIK ENTERPRISE
44	MEVADA DHVANI VASANTKUMAR	AUM CONTROL AND EQU.
45	NAKUM VISHAL VITTHALBHAI	AKSHAR INSTRUMENTATION
46	PATEL NAUMAN NAZEER	ESSAR
47	ROHAN RATHOD	TATA CHEMICALS LTD.
48	TANDEL PAVITRAKUMAR BHARATBHAI	HLE ENGINEERS PVT LTD.

*“Change is
hardest at the
beginning,
messiest in the
middle and
best at the end
Robin Sharma*

INSTRUMENTATION & CONTROL ENGG.- PLACEMENT Batch 2020 (Partial)

Sr. No	Name of Students	Company
1	VAGASIYA MEET KIRITBHAI	RELIANCE
2	LUJNIA CHANDAN DILIP	RELIANCE/ACCENTURE
3	PATEL MOHIT JITENDRABHAI	RELIANCE
4	DHOKAI NIHAR	RELIANCE
5	MANIPUZHA PRITHVIRAJ SANKARAN	RELIANCE
6	KAPOOR KHUSHBOO KAPIL	TCS/ACCENTURE
7	BHALIYA JAIMIN VINUBHAI	ACCENTURE
8	GADHETHARIYA ABHISHEK UPENDRABHAI	ACCENTURE
9	KALATHIYA JENISHKUMAR BHUPATBHAI	ACCENTURE/LTTS
10	PALKHIWALA SHUBHAM DARSHITKUMAR	ACCENTURE/LTTS
11	PARMAR MAYUR NATVARLAL	ACCENTURE
12	PATEL FENIL DILIPKUMAR	ACCENTURE
13	RATHOD DHRUV PARESHBHAI	ACCENTURE
14	SHAH SHIVAM MITESHKUMAR	ACCENTURE
15	JINJALA SANJAYKUMAR DULABHAI	EINFOCHIPS
16	SHAH PRIYAN DHARMESHKUMAR	LTTS

Every morning you are handed 24 golden hours. They are one of the few things in this world that you get free of charge. If you had all the money in the world, you couldn't buy an extra hour. What will you do with this priceless treasure ? Remember, you must use it, as in is given only once. Once wasted you cannot get it back. - Anonymos



Tree – Plantation drive was carried out at department in association with “Save Earth “ NGO. Head of the Department, Faculties and the students from all the semesters joined this event in the department lawn. This was a step towards climate change.

Confidence and Hard-work is the best medicine to kill the disease called failure. It will make you a successful person.”

“It Is Very Easy To Defeat Someone, But It Is Very Hard To Win Someone.”

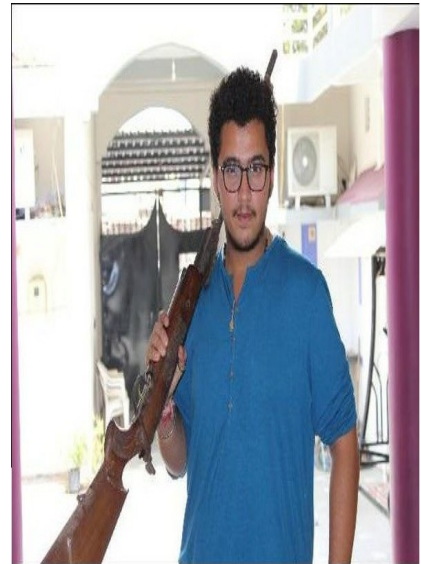
–Avul Pakir Jainulabdeen Abdul Kalam



Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid.
Albert Einstein



Aninda Dey Sarkar and Ajay Vegad students of 5th semester won national robotics competition at IIT Delhi among 108 teams including IITs, NITs, etc. They represented as Team India in International robotics competition ABU Robocon at Mongolia. This years robot theme was based on Mongolian culture.



Department's student Janvi Dubal(fine arts), Rutvij Thakar (theatre & music), Khyati Bhatt (theatre), Tej Patel (theatre), Himanshu Joshi (music), and Vipul Kamothi (folk dance) participated in XITIJ 2019 and became Zonal champions. Students prepared drama on menstrual cycle to create awareness about wrong beliefs related to it. They further represented LDCE at inter-zonals and AIU events.

Varun Kapoor student of 1st semester stood 2nd in rifle shooting at Khanpur.



STUDENT NAME: Kateja Kinnari Jayantibhai (180280703007)

DISSERTATION TITLE : Development of Data acquisition system to capture vibration signature for health of monitoring of rotating machine

GUIDED BY: Prof.(Dr.)M.T.Thakker

ABSTRACT: Rotating Machines are widely used, not only in the industrial environment, but also in our day-to-day life. It is essential to monitor health of such rotating machines in order to keep them in good operating condition that prevents failure and production loss, in addition to increased life. Machine defect occurring due to any reason, alters vibration characteristics which can be compared with that of healthy characteristics to diagnose fault, if any. The dynamic characteristics in the form of vibration patterns it generates while in operation, show some specific signature. In the proposed system, accurate signal from a standard vibration transducer will be obtained. Data acquisition system will be designed to capture signature from the vibrating system with the help of a sensor. The virtual instrument will be used to process the signature thus captured in LabVIEW environment in order to compare healthy and faulty signals. Results of the proposed data acquisition system will then be compared with standard FFT analyzer for better understanding and visualization of the condition monitoring system. optimization algorithm and ant colony optimization algorithm.



STUDENT NAME: Joshi Dinal Rameshbhai (180280703006)

DISSERTATION TITLE : Design of Hybrid Digital Image Filter for efficient Speckle noise suppression

GUIDED BY: Prof.. M. C. Patel

ABSTRACT: Ultrasound imaging uses very high-frequency sound waves to construct images of the inner body. This is very advantageous in terms of Non-invasive and inexpensive techniques for diagnosis and treatment. These images are inherently corrupted with some unwanted speckle noise which is being multiplicative that degrades the visual quality of an image. It occurs due to some granular interference during image acquisition which makes image quality poor that leads to image-based interpretation and diagnosis by doctors somewhat difficult. So, for segmentation speckle filtering is needed as a pre-processing step. Several approaches have been proposed for speckle suppression are mean filter, median filter, wavelet decomposition based filter and Bilateral filter. The limitation of these filters is in terms of either selection of proper thresholding or few filters preserve the fine details within the image or few filters provides only smoothening and maybe lost some important content of an image. Apart from all these methods, some techniques can be developed which can outperform in terms of operational speed, accuracy, minimum error and acceptability to the real world. Here a focus is made on the design of the Hybrid filter for speckle suppression and preserving the fine details of an image as well. These traditional filters can be compared for performance evaluation with the proposed filter. For quantitative evaluation, Peak signal to noise ratio (PSNR) along with mean square error (MSE), Root mean square error (RMSE), and also structural similarity index metric (SSIM) can be used for qualitative evaluation of the Ultrasound image.



STUDENT NAME: Desai Gopal Bhaveshkumar (180280703003)

DISSERTATION TITLE : Optimal design of modified digital smith predictor controller using evolutionary techniques

GUIDED BY: Prof. V. P. Patel

ABSTRACT: PID controller is effective to most of the processes but it has drawbacks when used to control processes with dead time. Presence of significant dead time in control system makes the system uncertain and gives large overshoot. When the time delay is large then control of such system becomes very difficult by classical tuning method like Ziegler nichols tuning method. When the dead time is large PID tuning can be difficult, response would be slower and closed loop dynamics can become unstable. When delay in control loop is large the smith predictor and modified smith predictor can give better performance. The smith predictor configuration moves delay out of the control loop. Modified smith predictor controller can be effectively tuned with evolutionary techniques like Genetic algorithm, Particle swarm optimization algorithm and ant colony optimization algorithm.

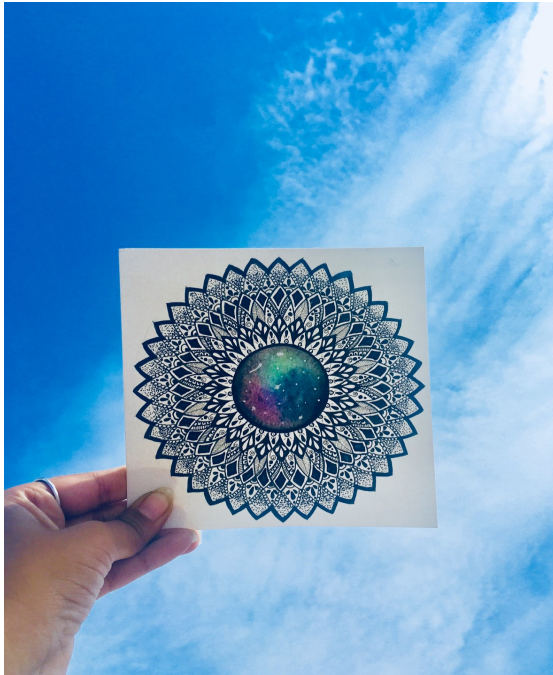


STUDENT NAME: Gajjar Binita Girishbhai (180280703005)

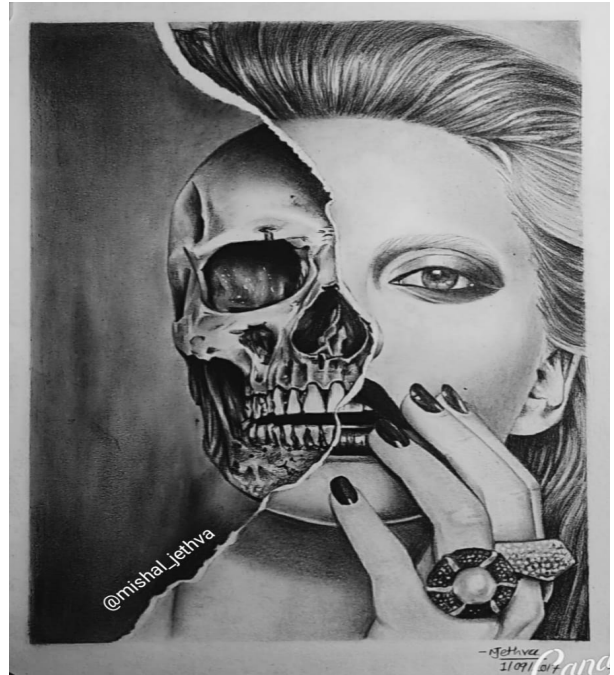
DISSERTATION TITLE : Spatial Resolution Enhancement Techniques for Digital Images on Embedded Platform

GUIDED BY: Prof.(Dr.) R. C. Patel

ABSTRACT: Resolution is the ability, to distinguish two separate points from a structure rather than a single fuzzy dot. Having hardware with extraordinary features is quite challenging, to raise the level of detail that can be seen unquestionably, different mathematical processing is done to it. For digital image processing, one of the broadly accepted techniques is spatial resolution enhancement, which bargains with low-resolution images to extract more comprehensive details. The enhancement of spatial resolution can be obtained using interpolation methods such as Nearest Neighbour, Bilinear Interpolation, Bicubic Interpolation. Likewise, the transform domain approach is also accepted for resolution increments such as Discrete Wavelet Transform. Apart from all the traditional methods, some techniques can be developed for the same, which can outperform in terms of the operational speed, accuracy, efficient error minimization and acceptability to the real-world utilities. Even the computational complexity of advance methods needs optimization of the reconstruction speed for super-resolution images. Many of the researchers in this domain have proposed their work on MATLAB which may not be cooperative with real-world elements. The proposed work will be focused on the development of thoroughly optimized algorithms on the embedded platform which can be easily employed to Surveillance activities, Medical diagnosis, Biometric information identification, and many more imminent schemes.



'Off to the Sky Limit'
Janvi Dubal(5th Sem)



'Inside Out'
Mishal Jethva(7th sem)



Shades of winter
Khusboo Kapoor(7th Sem)



Droplets Jail Break
Parikshit Dahivalkar(7th sem)

**“DEVELOP AN
‘ATTITUDE
OF
GRATITUDE’.
SAY THANK
YOU TO
EVERYONE
YOU MEET
FOR
EVERYTHING
THEY DO FOR
YOU.”
BRIAN
TRACY**

“શરૂઆત”

કાંટાઓની ફૂલ બનવાની,
શરૂઆત હવે થઈ ગઈ છે.
શબ્દોની ગજલ બનવાની,
શરૂઆત હવે થઈ ગઈ છે.
લખેલો કાગળ વંચાઈ રહ્યો,
આજે ખુદાનો દરબારમાં,
આજબુજબોના અમલીકરણની,
શરૂઆત હવે થઈ ગઈ છે.
હવાઈ રહી ફોરમ ફૂલોની
આ ધરતીને ચારેય કોર,
વસંતના વિવરણની,
શરૂઆત હવે થઈ ગઈ છે.

સિ.
મયંક પટેલ

‘Sharuaat’ By - Mayank Patel(5th Sem)



Parth Dave student of 3rd semester received best cadet of Gujarat directorate Senior division Army.



Shaifali Singh student of 5th semester received best cadet of SW Air.



IC Alumni 1972 batch

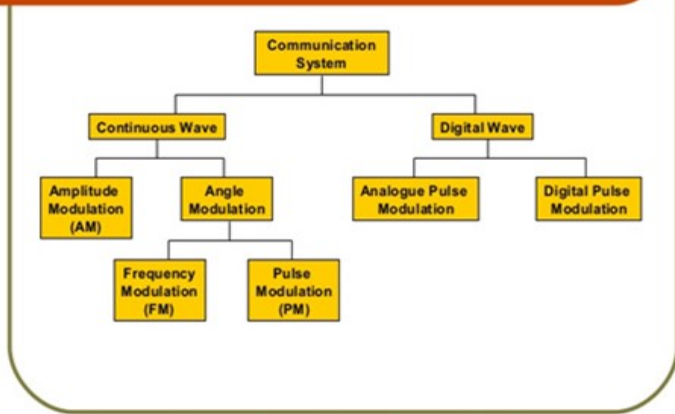


Republic Parade 2019



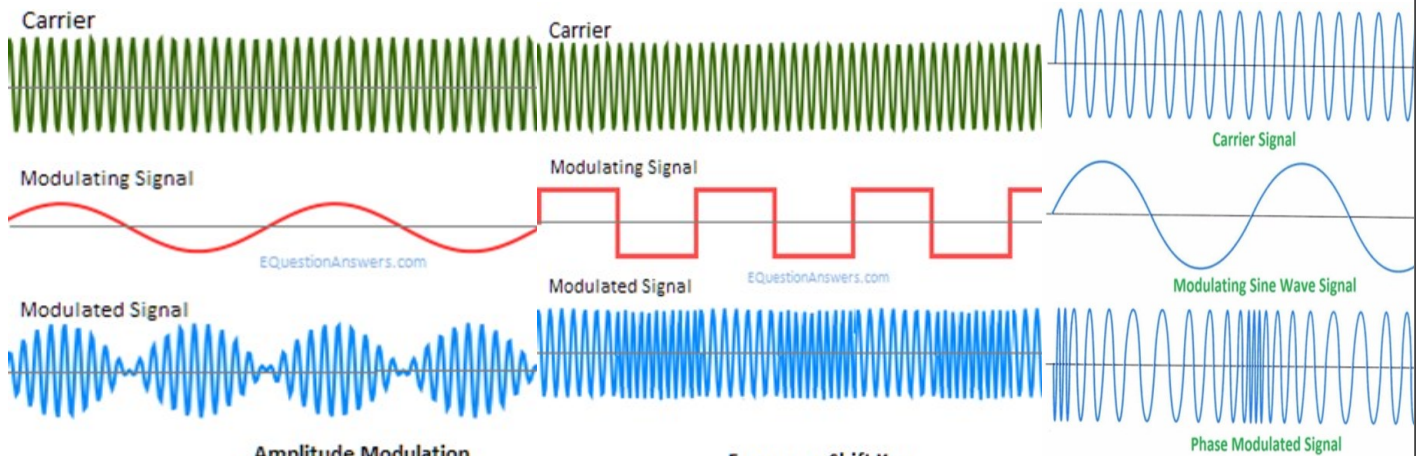
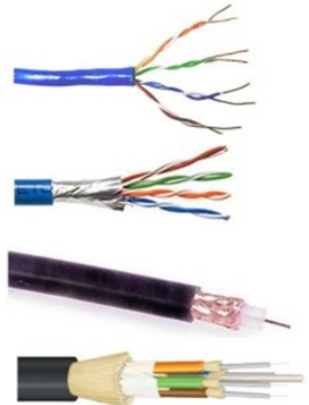
Tree Plantation 2019

Communication System Chart



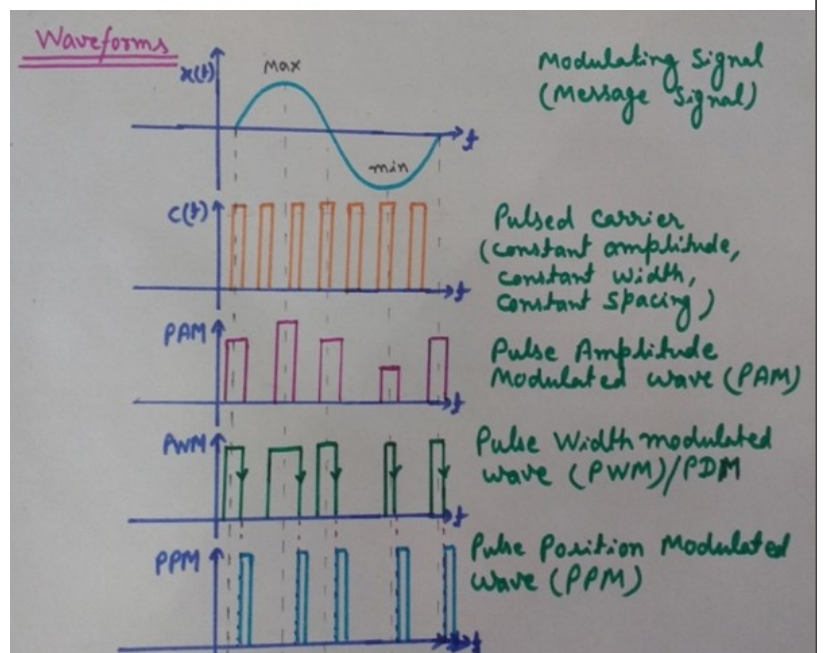
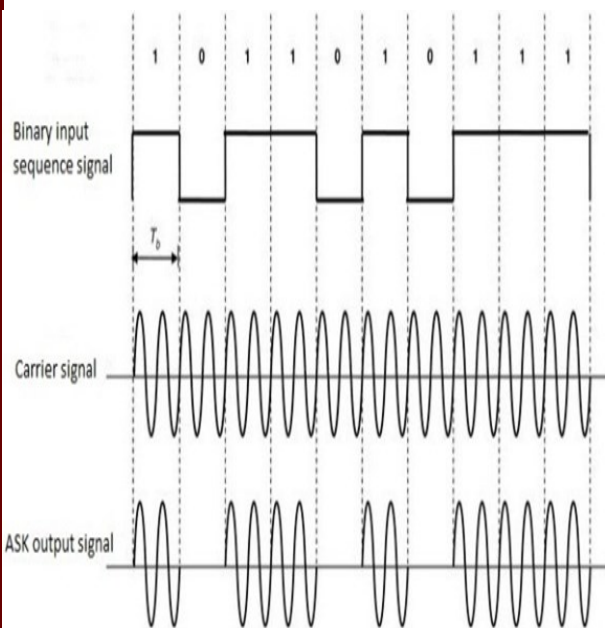
Common network cable types

- Unshielded twisted pair (UTP)
- Shielded twisted pair (STP)
- Coaxial cable
- Fiber optic



Amplitude Modulation

Frequency Shift Key



CONVOLUTION NEURAL NETWORK- A DEEP LEARNING APPROACH

Prof. Manisha Patel, IC DEPARTMENT

Convolution Neural Network (CNN) is a deep learning approach that is applied to analysing visual imagery. Compare to ANN (Artificial Neural Network), CNN can learn highly abstract features to identify objects very efficiently. CNN have certain beneficial advantages like sparse connection, parameter sharing and equivariance representation due to which training parameters reduced significantly, resulting in improved generalization. CNN extracts features from the images so it eliminates the need of manual feature extraction. The features are learned during the network trains on a set of images. This feature of CNN models makes extremely accurate for the computer vision tasks. CNN learn feature extraction through tens or hundreds of hidden layers and each layer increases the complexity of learned features.

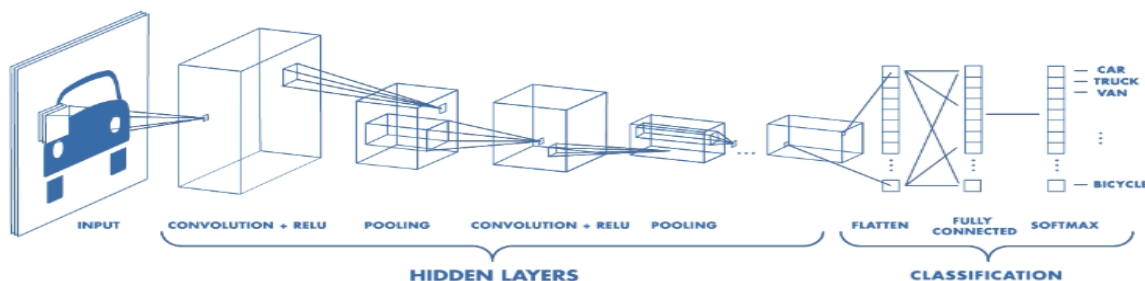


Figure 1. Convolution Neural Network [Mathwork]

In CNN less parameters that needs to train, so the training is smooth and not suffer from overfitting. Further the classification stage is incorporated with the stage of feature extraction as both uses learning process. Implementation of CNN is compared to easy that large ANN. Due to all above remarkable performance CNN are widely used in image classification, object detection, face detection, vehicle recognition, speech recognition, diabetic retinopathy, facial expression recognition and many more. Pose estimation incorporate with object detection, body key points location etc. so CNN is highly advisable network and thus majority of pose estimation model are comprised of CNN as a basic building block. A basic model of CNN consists four components- Convolutional layer, Pooling layer, Activation function and Fully connected layer.

(1) Convolutional Layer

Raw input data(images) is load and store at input layer whose final classification will be done at output layer. The input data- images specifies some parameters like width, height and number of channels. In RGB number of channels will be 3. Convolutional layers transform the input data by using a patch of locally connected neurons from the previous layer. A dot product will be computed between the region of the neurons in the input layer and weights vector (which remains equal at all points) to which they are locally connected, in the output layer. The weight vector also known as filter or kernel, slides over the input layer to generate feature map. This method of sliding filter horizontally as well as vertically is called as convolution operation. After applying convolution operation, the output a_{ij} for next layer can be

$$a_{ij} = \sigma ((w * x)_{ij}) + b \text{ -----(1)}$$

Where x is input layer, w is a weight vector or filter, b is the bias and “ $*$ ” represents convolution operation and σ non-linearity introduced in the network.

(2) Pooling Layer

When the features are detected its extracted location becomes less significant so the convolutional layer is followed by pooling or subsampling layer to reduce the number of learning parameters and introduce translation invariance. As it reduce data representation progressively over the network, which directly helps to control overfitting. To resize the data, pooling layer uses certain operation like max, min and average. Basically pooling layer uses filters to perform down sampling process on the input. This layer perform down-sampling operation along the spatial dimension of the input data. The most common set up for a pooling layer is to apply. 2×2 filter with a stride of 2, so will down sample each depth slide in the input volume by a factor of 2 on the spatial dimensions (width and height). Pooling layer have hyper-parameters, which are not learnable.

(3) Activation Function

In order to add nonlinearity, nowadays Rectified Linear Unit (ReLU) proved better than the former sigmoid function due to several advantages like – the calculation of partial derivatives of ReLU is easy, training time is lesser and ReLU do not allow gradients to disappear. Dying ReLU problem can be resolved by using Leaky ReLU.

(4) Fully Connected Layers

Fully connected layers have the normal parameters and hyper-parameters. This layer has connection between all of its neurons and every neuron in the previous layer. They perform transformation on input data as a function of activations (weights and biases of neurons).

(5) LeNet Architecture

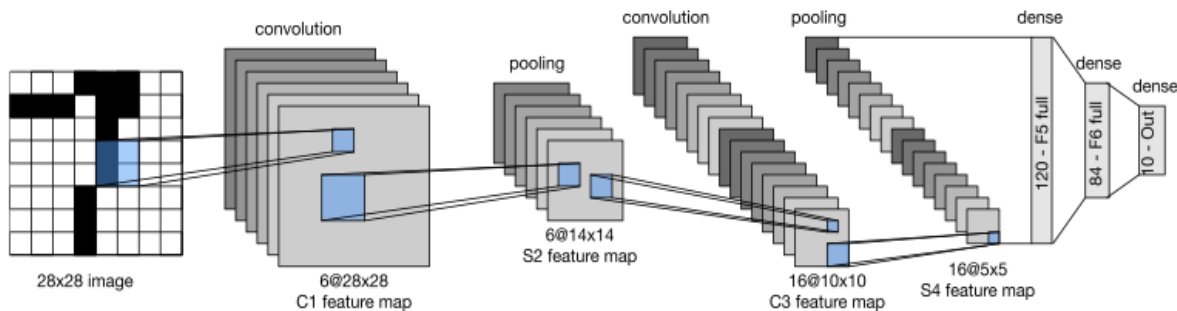


Figure 2. LeNet 5 Dataflow

To understand CNN in better way, LeNet architecture is mentioned above, which have convolutional layer, 5×5 kernel and processes every output with sigmoid activation function. The first convolutional layer has 6 output channels and second layer increases channel depth to 16. Height and weight are shrunk while the number of channels are increase considerably. So it makes the parameter sizes of two convolutional layer similar. In this network the pooling layer downsamples- precisely, one quarter the pre-pooling size. LeNet's fully connected layer has three fully connected layers with 120, 84 and 10 outputs respectively.

“Design and Development of Semi-Automatic Electro-Pneumatic System Using MATLAB”.

Student: Fataniya Arati J.

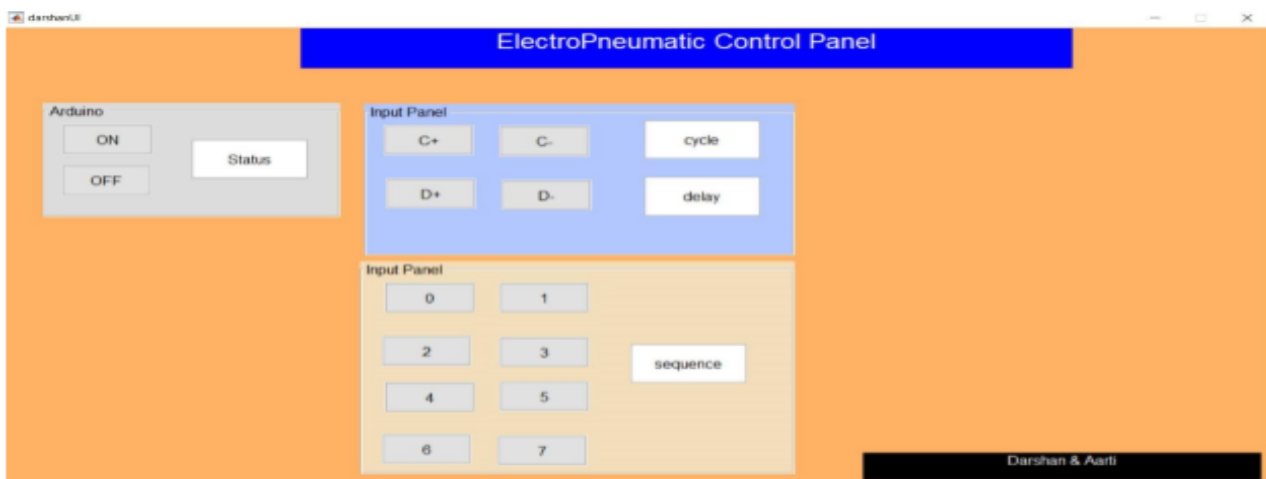
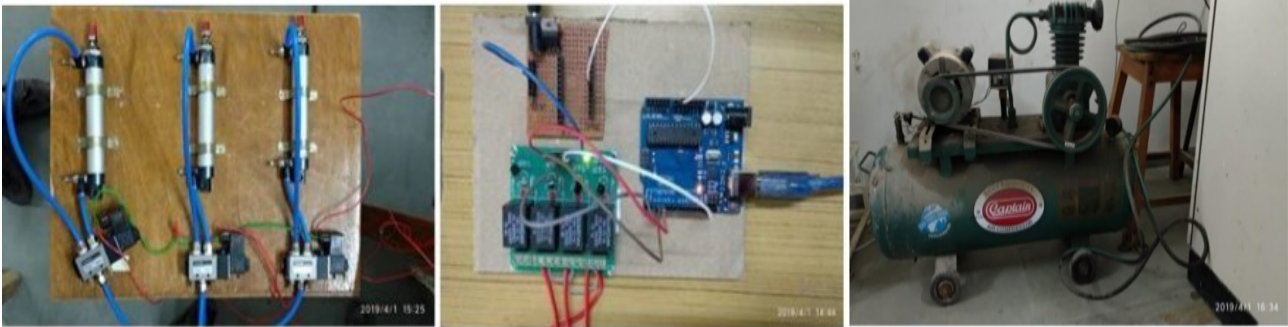
Nayak Darshankumar M

Guide: Prof. Divyesh V. Raninga

ABSTRACT

In today's era, Automation is a vital parameter. Even Small scale industries have also started to adopt semi-automatic or fully automatic machines according to their budget and productivity. As these machine are programmable, productivity automatically increases and lead time decreases. In order to increase the productivity, we have come up with a solution to design a Design a Computer Numerical Electro Pneumatic Control System for small scale industries. This system can create any machining sequence, which is driven by electro pneumatic system. User just have send some position and delay codes inside the controller to achieve any Positional step diagram in the system. This system is based on MATLAB and it also include GUI for visualization. The GUI screen shows the Performance of system and it's also used for interface between man and machine.

Hardware and Software Images



CONCLUSION

This Project on Electro-Pneumatic System has proved usefulness to improve the production and reduce the cost of small scale industries. In order to increase the productivity, we have come up with a solution to Design Electro Pneumatic Control System for small scale industries. This system can create any machining sequence, which is driven by electro pneumatics ystem. This system is based on MATLAB and it also include GUI for visualization. The GUI screen shows the Performance of system and it's also used for interface between man and machine.

AUTOMATION OF SEED SOWING MACHINE USING EMBEDDED SYSTEM

Guide: Prof. V. P. Patel

Student: Avadh J Dobariya, Prince A Marakana
Krunal P Tamboli

ABSTRACT

The aim of this project is to automate seed sowing methods in the agriculture industry. This particular system will work on motor driven mechanism completely running on battery. As the robot moves forward the plough will dig the furrow for the seed to be dropped. The seed dropping mechanism will drop the seeds equally spaced in a single row. And will cover the furrow after placing the seed. The robot uses sensors to detect boundaries and correct their motion according to the values obtained from the sensors. The robot can be operated via a handheld remote or automatically. It will be connected to an android device using a Wi-Fi module and will continuously transmit the data of soil moisture level.

This robot can be used by small scale farmers which do not have access to advanced farming technologies due to its cost. This robot will be affordable for small farmers it will be easy to use and will drastically reduce labor cost and equipment cost. It will also reduce labor cost .

Hardware and Software Images



CONCLUSION

This machine runs very efficiently compared to traditional manual methods and is less time consuming. This also requires less labour. Such application will be very useful in agricultural industry.

*you have to grow
from the inside
out. None can
teach you, none
can make you
spiritual. There
is no other
teacher but your
own soul.
—Swami
Vivekanand*



Mr. HAREN SHAH

Mr. Haren Shah is Chief Executive at Peach computers located at Gandhinagar, Gujarat,, India. He is Alumni of 1979 batch “IC” engineer.

He worked with Condenoll Technology Corporation as Director Engineer and with IBM Corporation as Staff Engineer. After this he started Peach computers in 1986 and lead it to different heights.

His professional experience holds the development and implementation of e-governance solutions, development of management information systems software and hardware, development of energy saving devices, development of self-learning tools etc.

Their goal is to boost the efficiency of industries and effectiveness of organizations by offering ICT solutions for management information Systems.

DR. R.K. GAJJAR, PRINCIPAL, LDCE

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*“THE ONLY WAY TO DO GREAT WORK IS TO LOVE WHAT YOU DO.
IF YOU HAVEN’T FOUND IT YET, KEEP LOOKING. DON’T SETTLE.” –
STEVE JOBS*