DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
UNIVERSITY COLLEGE OF ENGINEERING KAKINADA (A)
JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY KAKINADA
ACCREDITED BY NAAC A+

THE ECE PRESAGE

VOLUME-1
ISSUE-3
2024

CONTENTS

VISION/MISSION

VISION

To remain a symbol of pride in the fields of Electronics and Communication Engineering by producing holistic and diligent Engineers for industrial and societal needs.

MISSION

M1: To produce high quality learners who are globally competitive and professionally challenged in the field of Electronics and Communication Engineering.

M2: To offer educational programmes that imparts inventive knowledge with high levels of ethical and human values.

M3: To provide a platform to acquire and implement innovative ideas in research and development.

M4: To build up the state of art laboratories and centers of excellence in different areas of Electronics and Communication Engineering.

M5: To train the students and faculty to update their knowledge in pioneering technologies to meet industrial requirement.

EXPERT'S ARTICLE

FEASIBILITY AND DEVELOPMENT OF INDIAN REGIONAL SATELLITE-BASED QUANTUM POSITIONING SYSTEM- A TESTBED APPROACH (DIAMOND)

Dr.K Padma Raju
Ph.D, Post Doc (South Korea)
Professor of ECE,UCEK and former VC,AKNU

A Quantum signal propagating through the atmosphere experiences absorption and scattering propagation, affecting atmospheric turbulence results. The Atmospheric Refractive Index parameter Cn2 profile is crucial to monitor the atmospheric variability for QKD-based satellite-to-ground communication links.

Atmospheric turbulence is a function of location, time of day, wind speed, and other climate conditions and vegetation. The Cn2 atmospheric profile up 20 km is major atmospheric turbulence losses that are significant quantum QKD signals traversing the troposphere. The Cn2 profiles will be derived, and atmospheric scintillations over the Indian region will be characterized using Radiosonde observations. It is a known fact that cloud coverage is the most dominant feature that causes the blocking of satellite communication links. Generally, the satellites of low-earth orbits are affected by space weather conditions due to the dynamic change of atmospheric conditions and cloud cover, which in turn degrades the quality of data received by the ground stations. Various optimal ground station diversity techniques are employed to mitigate the effects of cloud coverage.

It is to be noted that, although cloud-free line-of-sight conditions exist, the optical satellite communication links are being affected by atmospheric turbulence, absorption, and scattering mechanisms. In the proposed work, the estimation of cloud-free line-of-sight (CFLOS) probability for the optical ground stations of a satellite communication network will be performed. The major problem in free-space optical networks is due to cloud blockage, which partially or entirely affects space-to-ground communication links, and these ground stations fail to receive data continuously from the satellites. Given this, site diversity plays a vital role in the continuous operability of the satellite network. Increasing the available number of optical links with the selection choice of multiple ground stations is termed site diversity. Prediction of the channel conditions in the future in accordance with past fluctuations leads to optimal and appropriate ground station selection. Using Reinforcement Learning Algorithms, the proposed model determines the ground station's optimal location to realize an efficient satellite communication system.

The specifications for Satellite payload transmitter optical beam waist and transmitter diameters for a WCP source and a FWHM of half the transmitter diameter for an entangled photon source. The quantum sensors, satellite subsystems, ground stations, and communication protocols will be identified. MATLAB/SIMULINK/Python tools will be utilized to model the behavior of the Quantum Navigation System under various conditions. Simulations of quantum entanglement-based communication and navigation scenarios will be analyzed to evaluate system performance. The outcome of this proposal would be beneficial for high-precision PNT applications, especially for autonomous vehicles and aviation transportation sectors.

MAJOR ACTIVITIES

IEEE STUDENT BRANCH INAUGURATION (03/08/2024)

A new way to learn and develop skills has motivated by Dr. B. Leela Kumari, HoD of ECE through IEEE Student Branch inauguration. Which encourage students to initiate in sharing professional knowledge and collaborate with other professional associations.

Our chief guest Prof. N.Mohan rao, Principal, UCEK, JNTUK appreciated the initiative taken by Dr. B.Leela Kumari and congratulated the IEEE student branch members. This program was a grand success, with the aim of establishing the innovative ideas of every individuals.

IEEE STUDENT BRANCH DETAILS :-

STUDENT BRANCH CODE : STB60222795.

SCHOOL CODE : 60224181.

GEOGRAPHIC UNIT : Asia(R10), under Vizag Bay Section (R00150) which is 12th Section in India and 59th Section in R10.

EXECUTIVE BODY ELECTION IEEE (03/08/2024)

Dr. B. Leela Kumari (HOD of ECE) and student Branch councilor, said that the students are to create modern technological and know how to develop and integrate the technical knowledge and expertise with various spheres of human endeavor to give a much-needed impetus to the technological progress of the nation and organized the election for executive team, by the students support executive members are elected and also proposed operating committee members and approved .

Executive Committee:
Chairman : P.Omkaram.
Vice chairmen : V.Devyanjali and S.Venkata lakshman.
Secretary : P. Vijaya kaveri .
Joint Secretary : M.Pavan vignesh kumar.
Treasurer : T.V.Ramani.

WORKSHOPS

IOT TRAINER KIT (10/07/2024)

A One Day National Level Workshop on Internet of things (IOT) was held on july 10th ,2024 . V.Bharat from Emsys technology acted as resource person and Dr.Durga Ganga Rao Kola and Mrs.Alugonda Rajani acted as coordinators and Dr. Balivada Leela kumari as convenor and Mrs.D.Viswa bharathi acted as co-coordinator . Around 50 students participated in the workshop.

CDMA-DSSS (26/07/2024)

A One Day National Level Workshop on CDMA-DSSS was organized on July 26th,2024 . B.Siva kiran kumar from Scientech pvt.ltd acted as resource person and Dr. Balivada Leela kumari acted as coordinators and convenor . Mrs.T.V.Ramani acted as co-coordinator . More than 40 students participated in the workshop.

SATELLITE TRANSCEIVER SYSTEM (26/07/2024)

A One Day National Level Workshop on SATELLITE TRANSCEIVER SYSTEM was held on july 26th ,2024 . B.Siva kiran kumar from scientech pvt. ltd acted as resource person and Dr. Balivada Leela kumari acted as coordinator and convenor . Mrs.T.V.Ramani acted as co-coordinator . More than 40 students participated in the workshop.

EMBEDDED LINUX (30/07/2024)

A one Day National Level Workshop on EMBEDDED Linux was organized on july 30th, 2024. Dr. B Leela kumari , HOD of ECE, UCEK acted as coordinator and Convenor . More than 35 students participated in the workshop.

V.Bharat from Emsys Technology has elaborated the working of Linux hardware and trained the students with Linux hardware kit like Jaston, ARM, Raspberry boards. This workshop helps the students to understand roll of Linux OS in embedded world.

DEPARTMENT ACTIVITIES

BOS UG MEETING (06-07-2024)

Board of Studies (BOS) meeting was conducted on July 6th, 2024. Both internal and external members constituted with academicians, industry experts and alumni have participated. The agenda focused on the finalization of course structure and Syllabus for B.Tech programsme. The discussions centered around curriculum development, enhancements to improve the quality of education in these fields. Insights from industry experts

WELCOMING PROF.K.PADMA RAJU , FORMER VC AKNU (19-07-2024)

PRINCIPAL VISIT (03-08-2024)

IETE GENERAL BODY ELECTION (11-07-2024)

BOS PG MEETING (23-09-2024)

Board of Studies (BOS) meeting was conducted for M.Tech programme in Communications and Signal Processing specialization on September 23rd , 2024. Both internal and external members constituted with academicians, industry experts and alumni have participated. The agenda focused on the finalization of course structure and Syllabus The discussions centered around curriculum development, enhancements to improve the quality of education in these fields. Insights from industry experts.

OTHER ACTIVITIES

M.TECH REVIEWS (12-07-2024)

B.TECH INTERNSHIP EVALUATION (03-08-2024)

The 3rd year B.Tech students have successfully completed one-month internship program with invaluable hands on experience in there respective fields and internship seminars ware organized in the department .

Industry experts delivered insightful workshops, equipping students with real-world knowledge and practical applications.

MASS PLEDGE AGAINST DRUGS (12-08-2024)

A pledge against drugs was made on August 12th, 2024. The event aimed to raise awareness about the harmful effects of drug abuse and promote efforts for drug eradication.

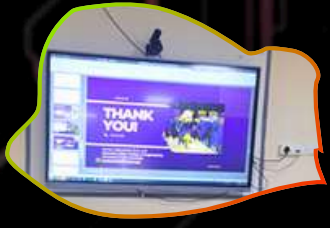
INDUSTRY INSTITUTE INTERACTION

Expert Talk by Industry Expert and Alumni of UCEK, JNTUK, Mr.B.Srinivas , PCB Design Engineer, Andhra Electronics Pvt Ltd on 27-07-2024 in association with IEEE student branch . Introduction of their organization and their vision towards the Electronics Industry.

They presented about Circuit Analysis of PCB boards using datasheets of IC's and Simulation of the Designed Circuits with Multisim tool to observe the functionality.

Collaboration with Tennessee Tech University

A meeting was arranged with Dr.Kumar Yalamarthy, Associate Dean, College of Engineering, Tennessee Tech University for academic Colloborations



INDUSTRY VISIT ENTREPRENEURSHIP TOUR TO HYDERABAD

The Subbu Kota Foundation and Cross Borders organized an insightful startup tour on August 2nd to CIE IIIT Hyderabad, T-Hub, and T-Works.

Mr. Prudhvi and Mr. Lakshmi Narayana of III B.Tech ,ECE are selected for participation

Participants explored Hyderabad's innovation ecosystem, learning how CIE nurtures startups through academic research, how T-Hub supports entrepreneurs with funding and mentorship, and how T-Works aids hardware startups in prototyping.

On August 3rd , a Panel Discussion with industry experts and startup founders examined key trends and challenges in India's startup landscape, with a focus on sectors like deep tech and sustainability. The event inspired future entrepreneurs to leverage innovation hubs for growth and success.

Expert Talk by Industry Expert and Alumni of UCEK, JNTUK, Mr.K.Sandilya, Design Engineer and Entrepreneur, Banashree Renewable Energy System Pvt Ltd delivered an expert talk on 13-08-2024 in association with IEEE student branch.

Mr. Krishna Sandilya Kallakuri, an esteemed industrial expert from Banashree Renewable Energy Systems Pvt. Ltd., provided students with a comprehensive overview of career opportunities and roles in VLSI (Very-Large-Scale Integration) and embedded systems engineering.During his presentation, He offered an in-depth analysis of the various job roles available to VLSI students.

He detailed the diverse opportunities within the industry, ranging from design and verification for testing and integration. His discussion encompassed the critical skills needed to excel in these positions, highlighting the importance of technical proficiency and practical experience.

RELEASE OF ECE PRESAGE VOLUME ~ 1, ISSUE ~ 2 (11-07-2024)

The prestigious department magazine of ECE PRESAGE VOLUME ~ 1, ISSUE ~ 2 was released.

FACULTY PUBLICATIONS

Dr. B. Leela Kumari authored a paper titled " comprehensive study on deep learning and its advancements in medical image analysis" published in the Journal of Electrical Systems, which is indexed in SCOPUS and UGC CARE (ISSN 1112-5209).

Dr.K.Padma Raju Published a patent titled "Feasibility And Development of Indian Regional Satellite-Based Quantum Positioning System- A Testbed Approach (DIAMOND)"

Dr. M. Sailaja published a study titled "Sensor Enhanced Deep Learning for ECG Arrhythmia Detection: Integrating Multiscale Convolutional and Self-Attentive GRU Networks" in the IEEE Sensors Journal on July 17, 2024.

Dr. K. Padma Priya authored a paper titled "Optimal Design of Low Power Ultra Wide Band Low Noise Transconductance Amplifier in 0.18μm CMOS Technology," set to be published in future issues of the SPRINGER journal Circuits, Systems and Signal Processing.

Dr. K. Rama Devi published a study titled "A Corrugated Edged Tapered Slot Antenna with Low Cross-Polarization and Moderate Gain for Phased Array Systems" in the journal Electromagnetics on September 16, 2024.

Dr. K. Rama Devi authored a paper titled "Edge Enhance Sparse Deep Auto Encoder Model for High-Accuracy Brain Tumor Detection in MRI Images," published in the Journal of Theoretical and Applied Information Technology on August 31, 2024, Volume 102, No. 16.

Dr. K. Rama Devi authored the article "Precision Forecasting: Optimizing Lithium-Ion Battery Remaining Usable Life Estimation with Cutting Edge Machine Learning," published in the Journal of Electrical Systems, Volume 20, Issue 3, in 2024.

Dr. K. Rama Devi published a paper titled "Optimizing Battery Capacity Prediction Using Advanced Machine Learning Algorithms: A Comparative Analysis of LSTM, RNN, SVM, RF, and Kalman Filter" in Tuijin Jishu/Journal of Propulsion Technology, Volume 45, Issue 2, in 2024 (ISSN: 1001-4055)

Dr. K. Rama Devi authored the paper "Enhancing Lifetime and Performance of Lithium-Ion Batteries through Advanced Passive Cell Balancing: An Intelligent Optimization Approach for 7S4P Battery Pack Modules," published in Rare Metal Materials and Engineering, Volume 53, Issue 4 (ISSN 1002-185X & eISSN: 1875-5372).

Dr. K. Rajasekhar contributed a book chapter titled "Fractional Order Differintegrators Design Using First Order Transform and Its Applications to ECG Signal," published in the Lecture Notes in Electrical Engineering: Advances in Signal Processing and Communication in July 2024.

Dr. K. Jhansi Rani authored the paper "A Hybrid DMFCC-LPC Based Feature Extraction with DCNN Clustering for Speaker Diarization," published in the International Journal of Intelligent Engineering & Systems in June 2024.

Dr. Gowthami Yadala authored the paper "An Improved Structure and Analysis of Asymmetrical Spacer Nanowire Tunnel Field Effect Transistor," set to be published in the International Journal of Engineering in December 2024.

Smt. B. Prasanthi published a paper titled "Four element equilateral triangular shaped MIMO antenna with connected ground for 5G sub-6 GHz N79 and WiFi-6E band applications."

INTERNATIONAL /NATIONAL CONFERENCES

Dr. B Leela Kumari presented the paper titled "Precision Agriculture with Autonomous Robotics:A Multi-purpose vehicle for efficient field Management" at an international conference on Advancements in Sustainable Energy, Materials and Manufacturing Technology on September 2024.

Dr. K. Rajasekhar presented the paper titled "Design of (1+α) order Butterworth Filter Using Curve Fitting Approximation" at the 2nd World Conference on Communication and Computing (WCONF-2024), held from 12th to 14th July 2024.

Dr. K. Rajasekhar presented the paper titled "Multiband Planar Sierpinski Bow-Tie Antenna Design for IoT Applications" at the International Conference on Intelligent Algorithms for Computational Intelligence Systems (IACIS) on 23rd-24th August 2024.

Dr. R. Madhu presented a paper on "Design and Implementation of Low Power and Area Efficient Hybrid AHL Multiplier" at the AIP Conference Proceedings on 8th July 2024.

THESIS/DISSERTATIONS

Dr. B. Leela Kumari supervised Mr. Azmeera Srinivas for the thesis titled "Level Set Segmentation of Mammogram Images Using Cuckoo Search-Based Optimization," which was completed on 13th September 2024.

Dr. R. Madhu supervised Mrs. T. Padmavathi for the thesis titled "Optimal Pilot Sequence Design and Channel Estimation for MIMO OFDM Systems," which was completed on 2nd July 2024.

COMMUNITY ENGAGEMENT/SPORTS

Dr. B. Leela Kumari leaded an NSS activity on 21st September 2024, involving I B. Tech (2024) students.

Satya satwik ganit participated in the AFA Attachment Camp at Air Force Station Bidar, Karnataka, from 29th July to 9th August 2024. With 15 cadets from different groups of Andhra Pradesh and Telangana .

PROFESSIONAL DEVELOPMENT

Dr. B. Leela Kumari acted as convener for an international one-week FDP on AI and GENAI for Industrial Applications, organized by Excellor under Skilled Development India, held online from July 16 to 22, 2024.

Dr. B. Leela Kumari convened a one-day workshop on IoT Trainer Kit on July 10, 2024, at the Department of ECE, UCEK, JNTUK.

Dr. B. Leela Kumari coordinated and convened a two-day workshop on CDMA-DSSS & Satellite Trainer Kit on July 24 and 25, 2024, at the Department of ECE, UCEK, JNTUK.

Dr. B. Leela Kumari co-coordinated and convened a one-day workshop on Embedded Linux Development Trainer Kit on July 30, 2024, at the Department of ECE, UCEK, JNTUK.

Dr. B. Leela Kumari participated in an online 21-day workshop on VLSI from July 26 to August 15, 2024, organized by Pantech E Learning.

Dr. B. Leela Kumari inaugurated the IEEE Student Branch as a Student Counsellor on August 3, 2024, at the Department of ECE, UCEK, JNTUK.

Dr. B. Leela Kumari conducted a 15-day Student Development Program on Cracking Coding from September 9 to 27, 2024, online through ExcelR.

Dr. B. Leela Kumari Awarded as "Best Teacher of the year excellence in teaching Award" by CSC recognized with knowledge training partner for AICTE, NIELIT,NEN,WADHWANI Foundation, MSME.

Dr. P. Vinay Kumar participated in a two-week FDP on Laboratory Safety Management from April 29 to May 10, 2024, at the National Institute of Technical Teachers Training and Research, Kolkata.

Dr. P. Vinay Kumar attended an online workshop on patent filing procedure in India organized by A.C.T Academy on August 17, 2024, Kerala.

Dr. K. Durga Ganga Rao participated in a program on IoT and image processing for UAV Application at the National Institute of Technical Teachers Training and Research, Chennai, from September 9 to 13, 2024.

Dr. K. Durga Ganga Rao participated in an FDP at the National Institute of Technology Warangal from July 16 to 25, 2024, Hyderabad.

Dr. K. Durga Ganga Rao coordinated a two-day workshop on ARDUINO and RASPBERRY PI board for IoT applications on July 10 and 11, 2024, at the Department of ECE, UCEK, JNTUK.

Dr. P. Pushpa Latha coordinated a two-day workshop on ARDUINO and RASPBERRY PI board for IoT applications on July 10 and 11, 2024, at the Department of ECE, UCEK, JNTUK.

Dr. P. Pushpa Latha attended a two-week STTP on research writing, funding proposal development, and patent drafting from July 8 to 20, 2024, held at Vidya Vihar Institute of Technology, Purnea, Bihar, and RSP Science Hub, Coimbatore, Tamil Nadu.

Dr. P. Pushpa Latha participated in a 21-day masterclass on advanced Python programming from August 13 to September 3, 2024, organized by Pantech E Learning, online.

Dr. K. Jhansi Rani coordinated a two-day workshop on ARDUINO and RASPBERRY PI board for IoT applications on July 10 and 11, 2024, at the Department of ECE, UCEK, JNTUK.

Dr. K. Jhansi Rani participated in a two-week short-term training program on research writing, funding proposal development, and patent drafting from July 8 to 20, 2024, held at Vidya Vihar Institute of Technology, Purnea, Bihar, and RSP Science Hub, Coimbatore, Tamil Nadu.

Smt. D. Viswa Bharathi co-coordinated a two-day workshop on IoT Trainer Kit on July 10, 2024, at the Department of ECE, UCEK, JNTUK.

Smt. T. V. Ramani co-coordinated a two-day workshop on CDMA-DSSS and Satellite Trainer Kit on July 24 and 25, 2024, at the Department of ECE, UCEK, JNTUK.

Smt. T. V. Ramani co-coordinated a one-day workshop on Embedded Linux Development Trainer Kit on July 30, 2024, at the Department of ECE, UCEK, JNTUK.

Smt. T. V. Ramani participated in an online 21-day workshop on VLSI from July 26 to August 15, 2024, organized by Pantech E Learning.

Smt. T. V. Ramani participated in 15-day Student Development Program on Cracking Coding from September 9 to 27, 2024, online through ExcelR.

STUDENT ACHIEVEMENTS

PLACEMENTS

STUDENTS PLACED IN MOSCHIP TECHNOLOGIES WITH 6-LAKES PACKAGE


M PAVAN VIGNESH KUMAR


PRIVADARSHINI


GIRIDHAR


VAMSI


RAJESWARI


DIVYA SATYA SRI


SURESH


LAKSHMAN

STUDENTS PLACED IN GALAXY 5-LAKES PACKAGE


SAMEERA


SANTHOSHI


ANUSHA


VAMSI


RAVINDER


SAILAJA

IEEE EVENT PUBLISHED

TEAR SHEETS

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కాకినాడ
ఆదివారం ఆగస్టు 4, 2024 5

ఐఈఈఈ స్టూడెంట్ బ్రాంచ్ ప్రారంభం

బ్రాంచ్‌ను ప్రారంభించిన అనంతరం విద్యార్థులతో యూసీఈకే ప్రిన్సిపల్, జేఎన్టీయూకే డైరెక్టర్లు

సాక్షి
కాకినాడ
ఆదివారం । 4 । ఆగస్టు । 2024

స్టూడెంట్ బ్రాంచ్‌తో సాంకేతిక నైపుణ్యం

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ఆదివారం,4 ఆగస్టు 2024 1

యుసిఇకె & ఈసీఈ విభాగం ఆధ్వర్యంలో ఐఈఈఈ స్టూడెంట్ బ్రాంచ్ ప్రారంభం

పెన్ పవర్

జేఎన్టీయూకే లో ఐఈఈఈ స్టూడెంట్ బ్రాంచ్ ప్రారంభం

PRESAGE LEGACY

SCAN ME

VOLUME -1
ISSUE - 1

SCAN ME

VOLUME - 1
ISSUE - 2

OUR TEAM

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DR. LEELA KUMARI BALIVADA

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