IIITM BULLETIN

ISSUE NO. 1 | March 2022

A QUARTERLY NEWSLETTER FROM IIIT MANIPUR.

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FROM THE DIRECTOR'S DESK

It is an honour to launch the first issue of IIITM Bulletin, a quarterly newsletter from IIIT Manipur. Taking this opportunity, I want to introduce briefly about the IIIT Manipur.

The Indian Institute of Information Technology Manipur (IIITM) is an institute of national importance established by an act of parliament in 2015 under the Ministry of Education, Government of India. The objective of the institute is to develop a technology and manpower for Information Technology (IT) related industries and make Manipur as a preferred destination for providing IT-related services and gateway to South-East Asia.

The IIIT Manipur offers B.Tech. programmes in **Computer Science and Engineering** (CSE) & **Electronics and Communication Engineering** (ECE) and **PhD in CSE, ECE and Humanities and Basic Sciences**. The campus is in a prime location at Imphal (12km from Airport), adjacent to New Secretariat of the State and across the Manipur Information Technology Park and Software Technology Park of India (STPI) with ample of opportunities for Entrepreneurship.

Another campus of IIIT is coming up in 150 acres of land in a scenic slope of beautiful mountains which is well connected through NH2 -National highway at Mayangkhang. IIIT has a vision of establishing itself as an Institution of excellence in Cyber Security, Cyber Crime and Forensic Analysis so that human resource from IIIT Manipur will be prepared to face this growing global threat. It also envisages itself for achieving excellence in application of robotics facilitating human life to overcome congenital as well as acquired disabilities. To achieve some of the above objectives it has already signed an MoU with overseas institutions.

Admission to IIIT Manipur will be purely on the basis of the All-India Joint Entrance Examination (JEE) Main and the seat allocation will be through Joint Seat Allocation Authority (JoSAA) and Central Seat Allocation Board (CSAB). I encourage our aspiring young students in higher-secondary schools in the country to appear for JEE (Main) and get into IIIT-Manipur in Imphal. We all look forward to receive the students from all over the world to raise their career prospects into greater heights.

The institute has excellent infrastructure with State of Art classrooms, Laboratories, conference halls, auditorium, playground, hostels, faculty quarters, guest house, and administrative offices. The personalized attention to each student is given through the mentorship by the faculty due to excellent students to teacher ratio. There will be opportunities for internships and semester exchange with premier institutions in the country and abroad. The institute nurtures its students to acquire adequate knowledge, technical and entrepreneurial skills through conducive learning ecosystem in the campus so as to cater the needs of the society and diverse industries. Many industries visit the institute for campus recruitment/placement. In the past-years, the institute has produced many young energetic Engineers with almost hundred percent placements and now they are working in renowned organizations/companies.

Through the help of this bulletin, I want to spread the information about the important events, achievements and new inventions taking place in this institutional hotspot of IT learning and innovations.

I wish the grand success of this quarterly newsletter bulletin.

IMPORTANT EVENTS

New Director of IIIT Manipur

Prof. Krishnan Baskar has joined as the new director of IIIT Manipur. He is replacing the earlier director Prof. A.K. Das. A small ceremony was held for handing over of the post, in which the teaching and non-teaching staffs of the institute were present.

Prof. Dr. Krishnan BASKAR hails from an Agricultural family at Kottaikuppam Village, Thiruvallur District, Tamilnadu, India. He obtained his Master Degree in Physics from Madras University and got his Ph.D. from Anna University. He joined in Anna University, Chennai in 1991. The Royal Institute of Technology (KTH) in Stockholm, Sweden, awarded him the title of "Docent' for accomplishments in semiconductor materials technology in 2001.

He did four years of postdoctoral studies at Nagoya Institute of Technology (NIT) and Electrotechnical Laboratory (ETL), Japan, during 1995-1999 with Monbusho Fellowship through Government of India and Science and Technology Agency Fellowship of Japanese Government. He worked three years as a Visiting Researcher at Royal Institute of Technology, Stockholm, Sweden, during 2001- 2004.

He was formerly the Vice Chancellor of Manonmaniam Sundaranar University, the Director of Centre for International Affairs, Anna University during 2008-2012 and the Director, Crystal Growth Centre (UGC-National facility) during 2012-2016.

In the event, Prof. Krishnan Baskar assured that all efforts will be made to establish this IIIT as one of the best leading institutions in its chosen area not only in India but in the Global arena.

ACTIVITIES

IIIT Manipur Celebrates Republic Day, 2022

IIIT Manipur celebrated, the Republic Day on 26th January, 2022 in its Mantripukhri campus, Imphal in the presence of faculty members and staff of the institute. The institute hoisted the national flag and the staff members addressed the gathering with his inspirational words. All members of the college celebrated the Festival of Democracy of India.

ABVP - 7th state conference

Akhil Bharatiya Vidyarthi Parishad (ABVP) Manipur 7th State Conference was held on 15th March, 2022 at IIIT Manipur, Mantripukhri, Imphal.

The conference was attended by National secretary Shri. Harikrishna Nagothu, Padmashree Awardee smt. M. Muktamani as Chief Guest,Prof. Krishna Basker as Guest of Honour,Dr. Th. David Singh(State president) and RK Rabichandra Singh(State Secretary).

ABVP members present at the conference encouraged students to work hard in order to bring laurels not only to the college but also to Manipur and in time, India. Students felt extremely delighted to be able to meet student representatives who keep working for the welfare of other students in and outside Manipur. The event was a huge success as the exposure to highly motivating and successful people left students impacted at the deepest level. Students of IIIT Manipur promised to work for the betterment of other fellow students.

Ek Bharat Shrestha Bharat

'Ek Bharat Shreshtha Bharat' was observed at IIIT Manipur on 19th February,2022 with the objective that cultural diversity is to be celebrated through mutual interaction & reciprocity between people of different States and UTs. The event was attended by the Director, Faculty, Staff and Students in large numbers with a great enthusiasm and spirit. On this occasion, students, staff, faculty from different cultures and states participated and conducted activities like culinary exchange, learning of languages, cultural exchange. The rich culture, art, music, food and festivals of India was showcased in the event reminding India is a country that believes in Unity in Diversity.

One Day Awareness Program On Recent Advances In Engineering And Technology

Indian Institute of Technology,Manipur organised a one day awareness program on "Recent Advances in Engineering and Technology" on 19th March 2022 . The event was attended by Dr. Rajkumar Ranjan Singh ,Hon'ble Union Minister of State for Education and External Affairs Government of India as the Chief Guest and many other dignitaries. Students from various parts of the state also attended the program. The event was organized with an objective to give an insight on developing technologies in the field of engineering to the young generation of the society and provide them with a platform. Welcome address speech was addressed by Dr. Navanath Saharia,HoD, Dept. of CSE which was followed by lighting of lamp by the dignitaries, Director and faculties of IIIT Manipur. In his presidential speech, Director, Dr. Krishnan Baskar of IIIT Manipur spoke about the latest science topics such as AI(Artificial Intelligence) and Robotics in enhancing the lives of humans. Dr. Baskar also informed that there are 25 IIITs across the country with just two IIITs in the entire Northeastern states. Dr. Rajkumar Ranjan Singh, expressed the key role of science and technology in human civilisation while speaking at the awareness programme. He also highlighted the importance of studying science and appealed to the people, particularly the younger generations, to learn more about science by simply observing the environment with an interest. A technical-cum-interaction session was also held. The event ended with a Vote of Thanks by Dr. Kishorjit Nongmeikapam (Co-Ordinator).

ACHIEVEMENTS

100% placement record

IIIT Manipur has had successful recruitments for the past years with companies like TCS,Jio,Infosys,Deloitte,IBM,Capgemini,Amazon,Cognizant any many more. Placement 2022 concluded recently with an overall 100% placement rate with an average package of 9.9 LPA. The highest package offered was 45.64 LPA.

Shivam Sharma
Amazon India
CSE

Mohd. Shadab
Virtusa
CSE

Piyush Kumar
Capgemini
CSE

Angelina Lamho
Capgemini
CSE

Yasa Ali Rizvi
Delloite

Harsh Mishra
L&T Infotech

Jitendra S. Pitchuka
Capgemini

E.A. Karimi
IBM

Ayas Behera
Mathrithms
CSE

Anurag Ankit
Infosys
CSE

Kanhaiya Lal
Virtusa
CSE

Tangella Venkateswarlu
L&T nfotech
CSE

100% placement record

Lucky Kumari
Virtusa
CSE

Swapnil Kandpal
Delloite
CSE

Kshitiz
Capgemini
CSE

Pankaj Kr. Bijarniya
Virtusa
CSE

Aditya Raj
Amazon India
ECE

Yasa Ali Rizvi
Publicis Sapient
ECE

Reshabh Shukla
Capgemini
ECE

Siddharth Mishra
Virtusa
ECE

Apoorv Nigam
Publicis Sapient
ECE

Samarjeet Barman
Virtusa
ECE

Two IIIT Manipur freshers bagged high package jobs

Mr. Shivam Sharma (18010121), a student of BTech in Computer Science & Engineering and Mr. Aditya Raj (18010210), a student of BTech in Electronics and Communication Engineering bagged 46 Lakhs LPA from Amazon India.

They were punctual students of IIIT Manipur who were keen to explore new arenas of IT technologies and had a sharp mind of problem solving. They were active contributors of open source software and participated in programming competitions/Hackathons.

Shivam Sharma
Amazon India, CSE

Aditya Raj
Amazon India, ECE

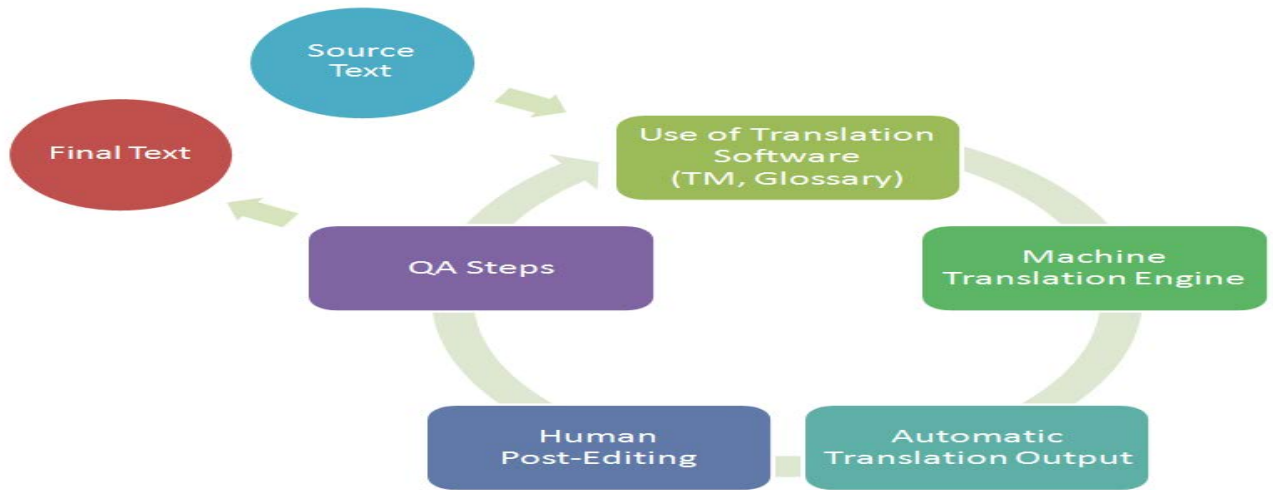## IIITM student Rituraj Chaudhary was awarded the Google 'Hall of Fame' Award

Rituraj Chaudhary, a BTech second-year student of IIIT Manipur(CSE), detected a bug in the famous search engine Google. The bug was reported to the Google's Bug Hunting community putting his name in the list of its researchers.

He is awarded with the "Tiger" award category as shown in his profile in the bughunters.google.com. He successfully took the threat level measuring P2 on the scale. In cybersecurity, a bug severity is graded on a scale of P3-P0(low-critical).

Rituraj is fond of programming competitions/hackathons, and dedicated his free time in contributing to open source software development and maintenance.

Dr. Kishorjit Nongmeikapam bagged Rs. 2.43 crore project from MeitY, Govt. of India

Dr. Kishorjit Nongmeikapam, an Asst. Professor in the Department of Computer Science and Engineering at IIIT Manipur received a project grant of Rs. 243.82 Lakhs from MeitY, Govt. of India for the project "ISHAAN: A system for Bidirectional Machine Translation between 1) English and Assamese, Bodo, Manipuri, Nepali 2) Manipuri and Hindi 3) Assamese and Bodo."
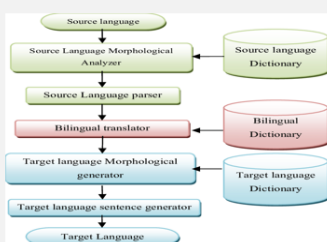
The project is a consortium project headed by IIT Bombay. This project is aimed at developing a high-quality bidirectional Machine Translation (MT) system for translation between 1) English - Manipuri and 2) Hindi – Manipuri.

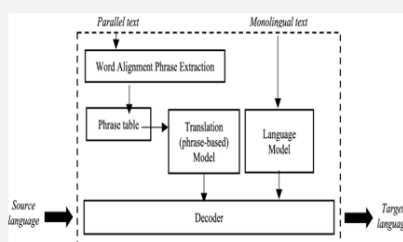Along with the project includes the works of:
- Development of Mobile App, web service, and APIs for the MT system.
- Creation of linguistic resources (Parallel corpora).
- Development of benchmark data for MT of each pair.
- Development of standards for evaluation and corpora creation.
- Deployment of MT system for the stakeholders.

This project will help the gap of Manipuri language towards the modern digital world and Artificial Intelligence based machine translation to other languages, specially the national language (Hindi) and the global language (English). The grant of this project also hints the potential of other local languages of Manipur to work towards the same goal.
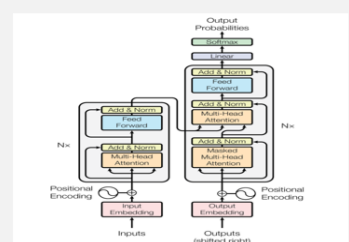
Development of Machine translation system: Develop a Bidirectional text-to-text MT system between the language pairs as mentioned above by exploring several models as rule based, statistical and transformer based models.

Rule Based model   Statistical Based model   Transformer Based model

Publications

- **A. K. Chaudhary** and **M. Manohar**, "A Modified SWB Hexagonal Fractal Spatial Diversity Antenna with High Isolation Using Meander Line Approach," IEEE Access, Vol. 10, pp. 10238 - 10250, 2022. **Impact factor – 3.367 (January, 2022)**

- **M. Manohar**, "A High selectivity dual band-stop antenna with wide tuning characteristics for UWB applications," Analog Integrated Circuits and Signal Processing (Springer), Vol. 35, Issue 15, pp. 71–79, 2022. **Impact factor – 1.337 (February, 2022)**

- **Singh, N.J.** and **Nongmeikapam, K**., 2022. Semantic Segmentation of Satellite Images Using Deep-Unet. Arabian Journal for Science and Engineering, pp.1-13. **(March, 2022)**

Invited Talks/Workshops/Session Chairs

- **Dr. Kishorjit Nongmeikapam chaired the following session:**

Five Days Online Faculty Development Program on "AI and ML for Pattern and Voice Recognition" conducted NATIONAL INSTITUTE OF TECHNOLOGY MANIPUR, IMPHAL. He chaired the Technical Session 1 of Day 4 on 17/02/2022, Thursday.

ARTICLE OF THE QUARTER

RAAS LEELA: The Dance of Devine Love

The dance form tells the story of Krishna, Radha and the Gopis, and is considered as Krishna's favourite thing to do. Raas Leela in Manipur is performed at the temples of Shree Govindjee in Imphal. The Manipuri Raas Leela are of five kinds: Vasanta Raas - performed during the full moon of March-Arpil; Maha Raas - only performed on the full moon period of November-December; Nitya Raas; Kunja Raas and; Diba Raas - to be performed only during the day.Vasanta Raas is performed during the full moon of March-Arpil in spring season or Vasanta season while Maha Raas is performed on the full moon period of November-December. In accord with Maha Raas, Nitya Raas, Kunja Raas and Diba Raas – also celebrated during the same period. The Raas Leela was first started as a dance form in 1779 by Ningthou Ching-Thang Khomba, also known as Rajarshi Bhagya Chandra, a 18th century Meitei monarch.

King Bhagyachandra ascended to the throne of Manipur in 1759 a few years after the death of his grandfather Pamheiba. During his reign, Vaishnavism, or the worship of Lord Vishnu in this region(Manipur) gained popularity. It is said that Lord Krishna often appeared in the dream of Rajshri Bhagyachandra Maharaj performing Raas Leela. He decided to make his dream a reality and have a Raas Leela performed by the people of Manipur. In 1779, he established the Shree Shree Govindaji temple and Raas Leela was performed in the form of a dance that was choreographed by the king's daughter Shija Lailoibi,also playing as Radha at the first performance.

The Manipuri Raas Leela is unique, not only in terms of characters(Lord Krishna,Radha and Gopis) but also the costumes. The dancers depicting Radha and Gopis adorns themselves with embroidered stiff skirt, light muslin garment on top, white veil and traditional Manipuri jewellery while, to depict Krishna, a dancer dresses herself in a bright coloured dhoti along with a peacock feather that adorns her forehead. In the past, Manipur has hosted Raas Leela Festival where many groups participated. What sets Manipuri Raas Leela apart from most classical dance forms is the absence of belled anklets(ghungroos) from the dancers' feet, that are completely covered by the skirt. The soft movements with dainty footworks makes it one of the softest and purest dance forms with the dancers gliding across the mandap(performance hall) to the tunes of instruments like cymbals, flute, and the pena, a Manipuri string instrument. A Raas Leela is usually preceded by a Sankirtana, in which male artists take up the Pung Cholam [a drum resembling the mridangam], and play the Kartal Cholum [similar to cymbals] to invoke the bhakti bhava central to Manipuri.

Raas Leela is a dance form where performance meets history and mythology. It portrays the worship and love of Lord Krishna and Radha alongside the rich art and culture of the region. The best time to watch Raas Leela in Manipur is during the full moon of March-April or November-December.

Department of Higher Education
Ministry of Education
Government of India

भारतीय सूचना प्रौद्योगिकी संस्थान, मणिपुर
Indian Institute of Information Technology, Manipur
(An Institute of National Importance by Act of Parliament)

About the Institute

Indian Institute of Information Technology, Manipur (IIITM) is an institution under the Ministry of Education, Govt. of India. The institute was established in 2015 in order to develop Manipur as a preferred destination for Information Technology (IT) related manpower and industry. This shall enable Manipur to gear up for providing IT-related services as well as high-quality Research & Development in IT. The institute offers B.Tech programme in Computer Science and Engineering (CSE) and Electronics and Communication Engineering (ECE) and PhD in CSE, ECE and Humanities and Basic Sciences from the city campus located at Mantripukhri, Imphal, just 12 km away from airport. The campus of the institute has adequate Stateof Art classrooms, laboratories for CSE andECE, conference hall, playground, hostels, faculty quarters, guest house, and administrative offices.

Programmes Offered

Undergraduate Courses (B. Tech)
- Computer Science and Engineering
- Electronics and Communication Engineering

Doctoral Programme (Ph. D)
- Computer Science and Engineering
- Electronics and Communication Engineering
- Mathematics
- Linguistics

New Courses in 2022-2023

Undergraduate (B.Tech)
- CSE with Specialization in **Artificial Intelligence and Data Science**
- ECE with Specialization in **VLSI and Embedded Systems**

Thrust Areas of Research

Computer Science and Engineering
- Data Mining
- Natural Language Processing
- Speech Processing
- Machine Learning
- UAV
- Social Media Analysis
- Human Computer Interaction
- Hyperspectral Image Processing

Electronics and Communication Engineering
- VLSI & Embedded Systems
- Signal Processing
- MEMs & Microfabrication
- Wireless Communication
- RF & Microwaves
- Antenna Design

Mathematics
- Computational Mathematics
- Sampling Techniques

Linguistics
- Lexicography
- Language Documentation
- Human Language Technology

Admissions

Joint Seat Allocation Authority (JOSAA) Institute Code: **313 (Indian Institute of Information Technology, Manipur)**

Undergraduate (B.Tech)
Undergraduate Courses are admitted on the basis of **JEE(Main)** score through **JoSAA** and **CSAB** every year.

Doctoral Programme (Ph.D.)
Ph.D. programme in various specialization are admitted through advertisement in institute website from time to time.

Contact Us

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Ongoing/Live Funded Projects

"Multi-domain text-to-text machine translation system in synchrony with speech consortia to facilitate bidirectional translation."; Amount: 2.4382 Crore; PI: Dr. N. Kishorjit Singh; Funding Agency/ Collaborator: Ministry of Electronic and Information Technology (MEITY), Govt. of India

"Prototype Development of Self-biased High-power Circulator for Particle Accelerator."; Amount: INR 33 lakhs.; PI: Dr. Subasit Borah; Funding Agency/ Collaborator: Board of Research in Nuclear Science (BRNS)-DAE.

"A Prototype of Auto-navigating E-Cart using Multispectral Imaging."; Amount: INR 40 lakhs.; PI: Dr. N. Kishorjit Singh; Co-PI: Dr. Kabita Thaoroijam; Funding Agency/ Collaborator: Ministry of Electronic and Information Technology (MEITY), Govt. of India

"A multilingual Reference Wordnet on Four of the Major Indigenous Dialects of Manipur and Manipuri Languages."; Amount: INR 41 lakhs.; PI: Dr. N. Kishorjit Singh; Funding Agency/ Collaborator: SERB (Department of Science and Technology' Govt of India)

"IIIT Senapati, will serve as a benchmark for the entire north east"

- Shri Narendra Modi
Hon'ble Prime Minister of India

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY, MANIPUR
An Institute of National Importance by Act of Parliament, Govt. of India.