INDIA
INTERNET
WEEK

11ᵗʰ - 17ᵗʰ November, 2019 | Kolkata

2019
R E P O R T

Academic Conference & PhD Forum on internet stack

11ᵗʰ-12ᵗʰ November 2019

University of Calcutta, Technology Campus, JD-2, Sector-III, Salt Lake City, Kolkata- 700 098

A pre-IETF India Forum.

13ᵗʰ-14ᵗʰ November 2019

Ecohub - Citadel I, Ecospace Business park, Plot IIf/11, AA II, Newtown, West Bengal 700160, Kolkata

Global Forum on Cyber Expertise

14ᵗʰ November 2019

Ecohub - Citadel II, Ecospace Business park, Plot IIf/11, AA II, Newtown, West Bengal 700160, Kolkata

Youth Internet Governance Forum

14ᵗʰ November 2019

St. Xavier's University, Action Area III B, New Town, Kolkata - 700 160

India School on Internet Governance

15ᵗʰ-17ᵗʰ November 2019

Ecohub - Citadel I, Ecospace Business park, Plot IIf/11, AA II, Newtown, West Bengal 700160, Kolkata

Mr.Anupam Agrawal

Chair, India Internet Foundation

Dear Readers,
Greetings!!!

Its my pleasure to roll out the maiden India Internet Week 2019 report.

India Internet Week was an attempt to bring all the stakeholder groups together under the same platform wherein they collaborate with each other while making sure they continue to focus on the respective group objectives. We all have a responsibility towards Internet. The responsibility is to ensure proper management and development of Internet. The responsibility is different for different stakeholder groups and intergroup coordination and collaboration leads to its evolution.

While there is a strong focus on Digital India in the country, it requires a continuous pool of professionals both at the technical and policy level who can ensure the security and resiliency of Internet. It also requires that multi stakeholder model of engagement is created which drives the collaboration.

India Internet week saw more than 300 people participating across 5 different programs. The remote participation worked well where speakers could present as well as could discuss issues back and forth; organization of a first ever PhD forum where the researchers presented their thesis, an active academia was seen participating along with the future technologists (students); local & central government participated through their officers in the capacity development session; More than 7 speakers spoke at more than 2 programs within a span of 3 days.

An MoU with APNIC was signed during the India Internet Week for capacity development, and larger collaboration in the region.

In this 1st edition, I also noticed great enthusiasm from our technical community in terms of contributing to IETF and academic conferences where the business and startup community has kept on the engagement.

The next edition will be planned more effectively and will cover a larger scale and participants.

Regards
Anupam Agrawal

Internet Society
India Kolkata Chapter

MEMBERS

Anand Raje
[Chair]

Dr. Indrajit De
[Vice Chair]

Sushanta Sinha
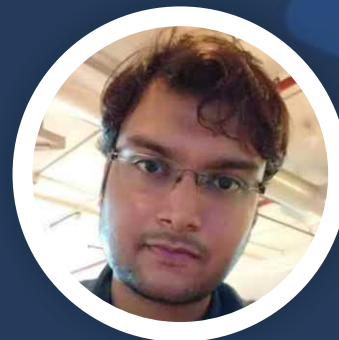*[Secretary]*

Abhijan Bhattacharyya
[VP-Projects]

Priyatosh Jana
[VP-Membership]

Tusharkanti Bhakta
[Treasurer]

Subhrajit Kabiraj
[Designer]

Souvik Deb
[Executive Member]

THE TIMES OF INDIA

9th November, 2019

City to host global Internet meet

TIMES NEWS NETWORK

Kolkata: The City of Joy will be hosting some of the best brains of the IT world at the India Internet Week 2019 from November 11 to November 17. The first-of-its-kind global meet will address people's view, policy, standards and governance of Internet.

The week would aim at driving economic progress by capacity development at all levels with a deep understanding of the future developments in technology and policy areas and develop knowhow for balanced and structured decision making in governance.

A spokesperson of the meet said the week will allow one to meet more than 300+ Internet and network professionals at India Internet Week 2019 as part of co-located events.

The events include iTIPS 2019, an international conference on internet technology, innovation, policy and standards. Besides, there would be Connections 2019 . The objective of Connections is to allow IETF (Intenet Engineering Task Force) experts to stop over in India, on the way to the Asian IETF meet. The other three events include GFCE, IGF 2019 and INSIG 2019, Glenn McKnight along with others.

THE TIMES OF INDIA

20th November, 2019

India Inc should boost eco with Internet: Experts

Sarthak.G@timesgroup.com

Kolkata: From software developers to data service providers, several internet-based companies have come up in India, but they are yet to boost the economy of the country. For an economic growth, these companies should start contributing to development of internet services, instead of guzzling the global wide area network as mere consumers, think global digital experts who assembled at the Connections, a two-day forum hosted by India Internet Foundation as part of India Internet Week this week.

Fred Baker, famous American engineer known for having developed computer network protocols for the internet, said: "We had built the internet to provide better communication facility to people. Now, the global communication network that is akin to electricity in daily life also has a plethora of business avenues that must be explored. The business houses must use the internet-based facilities for customers and this will in turn spell a growth in business."

'CONNECTIONS'

Baker was in the city along with other digital experts recently for the India Internet Week. He added, "The business community needs to apply the same principle that we had applied for the development of internet almost four decades ago."

Maarten Botterman, another expert from the Netherlands, said, "I see a lot of business opportunities in Kolkata and other parts of India with the help of internet. Various applications are there and the government here should depend by and large on digital services. The economy will benefit from internet if all aspects are taken into account. More investment needs to come in this sector. Our government gives focus on the security of internet," he said.

Echoing Baker and Botterman, Abhijan Bhattacharyya, vice president of Internet Society, said, "The awareness that internet is my right is need of the hour in the country where different layers of consumerism that banks on internet ought to be explored. Many hurdles are there, but they can be overcome till the government formulates revised policies."

MEDIA COVERAGE

11th - 12th
NOVEMBER
2 0 1 9

International Conference on Internet Technology, Innovation, Policy and Standards (iTIPS): This a unique symposium combining both Internet technology and policy with a clear objective to bring in Indian academia into the ecosystem. Thereby it aims at bridging theoretical modeling with practical implementation of protocols. This is being done in association with the University of Calcutta.

➤ Talks by eminent speakers from Indian as well as International Technology and Academic diaspora dealing with Networking Science and policy matters,

➤ PhD forum to learn and guide the on going work of scholars in different universities in the region,

➤ Invited papers on Internet technology and policy aspects,

➤ Panel discussions, etc.

SESSION

Tutorial I	Inaugral Session	Opening Key Note
Session Chair: Abhijan Bhattacharyya	Moderator: Abhijan Bhattacharyya	Speakers: Dr. Indrajit Ray

Internet Technology - Invited Talks	Internet Standards	Tutorial II
Session Chair: Prof. Amlan Chakrabarti	Session Chair: Dr. Indrajit De	Session Chair: Dr. Indrajit De

Internet Innovations - Invited Talks	PhD Forum & Invited Talks	Internet Policy - Panel Discussion
Session Chair: Abhijan Bhattacharyya	Session Chair: Abhijan Bhattacharyya	Moderator: Anupam Agrawal

PhD FORUM
PROMISING RESEARCH

TUTORIALS
IoT & NETWORK
SECURITY

iTIPS 2019
THE WORLD OF INTERNET

www.itips2019.iifon.org

In Collaboration With

UNIVERSITY OF CALCUTTA
ADVANCEMENT OF LEARNING

Organized By

iiFON
India Internet Foundation

Co-Sponsored By

acm Association for Computing Machinery
Kolkata Professional Chapter

University of Calcutta, Technology Campus,
JD-2, Sector-III, Salt Lake City, Kolkata- 700098

Internet Technologies, Innovation, Policy and Standards

SPEAKERS

Padma Shri Bimal Kr. Roy

Chairman of National
Statistical Commission of India

Mohit Sethi

Sr. Researcher, Ericsson,
Postdoc Researcher,
Aalto University, Finland.
Chair of Light-Weight
Implementation Guidance (Iwig), IETF

Dr. Indrajit Ray

Professor
at Colorado State University, USA

Dr. Amlan Chakrabarti

Professor & Director
A.K.Choudhury School of Information
Technology University of Calcutta

Anurag Bhatia

Network Researcher at
Hurricane Electric

Prof. Indrajit Banerjee

Department of Information
Technology IIEST Shibpur

Prof. Sandip Chakraborty

Assistant Professor
Department of CSE,
IIT Kharagpur

Prof. Asish Kr. Chattopadhyay

Pro-VC Academic Affairs,
University of Calcutta

Dr. Bimal Kumar Roy: TOPIC - Zero Information Authentication.

Panel Discussion: Internet Policy.

Facilitation of ITIPS speakers.

ITIPS 2019 at University of Calcutta

ITIPS 2019 at University of Calcutta

PhD FORUM

TALKS

➤ Multichannel Convergecast in WSN

➤ Blockchain Based IoT Infrastructure for Smart City: Application in Fault Detection

➤ Extended Abstract: Improved Data Dissemination, Techniques for Vehicular Communication

➤ Developing Authentication Solutions using Quick Response (QR) Code & Near Field Communication

➤ Development of a Fog Miner Based Device Authentication Model in IoT - Blockchain Platform

SPEAKERS

Chinmoy Ghorai
(IIEST Shibpur)

Divyans Mahansaria
(Jadavpur University)

Ms. Piyali Ganguly
(University of Calcutta)

Rajib Kumar Das
(University of Calcutta)

Rourab Paul
(Deemed to be University, Odisha)

iTIPS
THE WORLD OF INTERNET

11th - 12th
NOVEMBER
2 0 1 9

PARTICIPATION
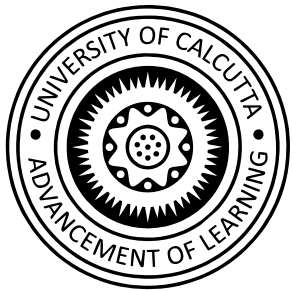
Government of India
Ministry of Statistics and
Programme Implementation

IIEST, Shibpur
आई आई ई एस टि, शिवपुर
Erstwhile B E College (Estd 1856)

India Internet Engineering Society (IIESoc)

Objective of Connections is to allow IETF (Intenet Engineering Task Force) experts to stop over in India, on the way to the Asian IETF meeting, and create a forum to help the local community engage in exchanges with IETF experts. After two successive years in Bangalore, Connections is coming to Kolkata this year as a component of the India Internet Week. Connections is organized by IIESoc. This time IIFON and ISOC Kolkata will act as the local facilitator for Connections. We are expecting quite a few attendance from our neighbouring countries in South Asia to attend iTIPS and Connections both.

Fred Baker	Adrian Farrel	Nalini Elkins	Paul Wilson
Bimal Kumar Roy	Mohit Sethi	Prateep Misra	Deepak Maheshwari
Dhruv Dhody	Abhijan Bhattacharyya	Venkatram Aurva	Vinayak Hegde
Anurag Bhatia	Rajeev Chaubey	Abhishek Goliya	Santosh P K

Connections 2019 - Orgnaissers from IIESOC & IIFON along with some speakers.

Connections 2019 - Session In Progress.

14th NOVEMBER
2 0 1 9

A robust, open and resilient internet infrastructure is key to counter infringements and threats to the cyber domain. An up-to-date internet infrastructure diminishes the chances and impact of cyber attacks (like DDoS) and cybercrime (hacking malware, phishing, botnets) and SPAM. Moreover a robust internet leads to more confidence and trust; increases the use of the internet and by consequence boosts innovative and economic activities. This workshop is initiated by the Global Forum for Cyber Expertise (http://www.thegfce.com), and is supported by APNIC (https://www.apnic.net/), Internet Society (http://www.internetsociety.org), and the Dutch Ministry of Economic Affairs and Climate. In India this is supported by Ministry of Electroinics & IT, Government of India.

Anurag Bhatia

Samiran Gupta

Simon Sohel Baroi

Anand Raje, Anupam Agrawal, Olivier Crepin-Leblond & Anurag Bhatia

Session : Better Use of Today's Open Internet Standards - Moderation by Maarten Botterman, GFCE Triple-I facilitator

Sessions in Progress : Incident response management

Sessions in Progress : Incident response management

14th
NOVEMBER
2 0 1 9

The second edition of Youth IGF India is being convened during 14th November at Kolkata. It single-day day event where we aim to raise awareness of the youth about internet governance and provide them with a platform to voice their opinions, amplify it and contribute in public policy discussions. This program works unders the aegis on United Nations and is part of the global Youth Internet Governance Forum.

Samiran Gupta

Glenn McKnight

Rajnesh Singh

Satish Babu

Ajay Data

Anand Raje

Amrita Choudhury

Sushanta Sinha

Srinivas Chendi

Opening Session of Youth IGF 2019 with speakers & Registrar of St. Xaviers University.

Panel discussion on IG Ecosystem, IG* Organizations and how to involve. Moderated by: Sabrina Lim(ICANN) with Panellists: Glenn McKnight (ISOC Board), Sushanta Sinha (India Internet Foundation), Anand Raje (ISOC Kolkata Chapter), Rajnesh Singh (ISOC), Paul Wilson (APNIC)

YIGF India Leaders with the Local Youth Representatives from St. Xaviers University.

YIGF Volunteers working to get the next session started.

Participants view of YIGF during the session - Privacy and Safeguards status in India challenges for the Youth.

YIGF participants during the IPGO Game

15th - 17th NOVEMBER 2019

India School on Internet Governance (INSIG) was established in 2016 to create new leaders in the field of Internet Governance. Its' main objective is to educate the future leaders of region about the complexities of Internet Governance along with global and local perspectives. As India transforms from Services to Product based economy in the domain of Information Communication and Technology, Indian participation needs to be significantly enhanced in the global Internet Governance fora to demonstrate India's viewpoints.

Maarten Botterman

Paul Wilson

Srinivas Chendi

Olivier Crepin

Samiran Gupta

Sushobhav Mukherjee

Tathagata Dutta

Arnold van Rhijn

Fred Baker

Shashank Mohan

Dr. Sumit Narula

Nehaa Chaudhary

Satish Babu

Anupam Agrawal

Anand Raje

Sabrina Lim

Olivier Crepin-Leblond & Fred Baker interacting as part of Q&A session post session on IETF

INSIG 2019 participants view during the session

Mr. Rajneesh Singh moderating the panel. Mr. Samiran Gupta (ICANN), Mr. Susobhan Mukherjee (Prime Infoserv) and Mr. Tathagata Dutta (Praxis Business School)

INSIG 2019 participants participating in the IPGO game

Anupam Agrawal, Chair ISOC Kolkata facilitating Mr. Arnold van Rhijn (Dutch Government)

Panel Discussion : Glenn McKnight, Sabrina Lim, Ihita, Olivier Crepin-Leblond & Rajneesh Singh

Internet Society Chapter Leaders facilitating Mr. Marteen Botterman.

The Team of Internet Society Trivandrum Chapter with Dr. Govind from Internet Society Delhi Chapter.

TECHNOLOGY MEETS POLICY
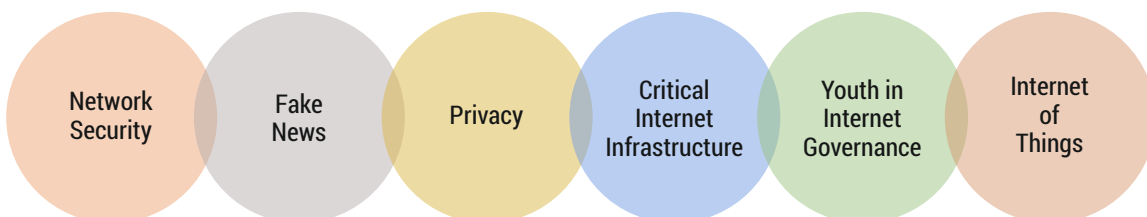
THE NEW INTERNET SILK ROUTE

Internet has allowed penetration of new digital technologies which are the bedrock for Industry 4.0 revolution. The rapid technological development and shifting domestic policy environment on Internet has created tension among the decision makers and implementers in making the right choice and remain relevant.

The India Internet Week Initiative aims to drive economic progress by capacity development at all levels. It aims to bring the technology and policy experts on Internet from across the globe for deep understanding of the future developments in technology and policy areas, discuss the current issues as it is being faced and develop know-how for balanced and structured decision making in governance and implementation.

Key Outcomes

1. The strong technical community in Kolkata made its presence felt in different discussions and India needs a milestone for milestone to run and hosting of IETF in India can provide the same.

2. The Academic Interface with Standardization is still low in India and policies encouraging the same will allow for Make in India camapaign at Network layer in ICT Industry successfull.

3. The policy discussions are in depth discussions but sporadic and a paltform is required for coherence.

4. Some of the steakeholders from large private organizations and a section of government who are impacted by Internet's developments choose to remain still at bay. A cultural change fro Consumer to Prosumer is required.

Network Security — Fake News — Privacy — Critical Internet Infrastructure — Youth in Internet Governance — Internet of Things

Team & Roles

ANUPAM AGRAWAL *Program & Governance*

An Information Technology Practitioner with leadership experience in IT Public Policy, Corporate Industry Forums, Information Technology Standards, & Program Implementation. He is a Chevening Fellow on Cyber Seurity and has been nominated twice as ISOC Ambassador to Internet Governance Forum.

In the current role of specialist in Corporate Industry Forums & Standards Cell, TATA Consultancy Services he manages the secretariat of ISO Sub Committee on Software & Systems Engineering. He is also the Convenor of Advisory Group on COmmunications & Outreach in ISO/IEC JTC 1 SC 7.

Extremely passionate on capacity development initiatives in Internet Governance, he has been the Chair of ISOC Kolkata Chapter and currently is the Chair of India Internet Foundation. The Foundation is a research think tank and works on issues directly impacting the trust on Internet.

Concept & Planning **ANAND RAJE**

An entrepreneur, solution architect, mentor having experience in Information Technology, Internet innovations and its optimized implementations.

As part of my technical community engagements, had an opportunity in contributing towards hosting India's first L-Root anycast instance. Executed IICB – Indian IETF Capacity Building program. Contributed towards hosting South Asia Network Operators Group (SANOG 34) and India Internet Week 2019 in Kolkata.

Currently technical solutions on blockchain, Internet measurements, DNS/DNSSEC implementation research keep me busy.

SUSHANTA SINHA *Program & Publicity*

Sushanta Sinha is an IT Professional, designing and developing software as well as grooming people for more than 25 years. He is an Enterprise Agile Coach of a large IT Organization. He is passionate about Internet Technology, and associated with various forums and professional bodies. His special intetest on Universal Acceptance (UA) is recognized through his current position of UA Ambassador from India.

Communications & Outreach **ABHIJAN BHATTACHARYYA**

Abhijan Bhattacharyya is presently serving as a Senior Scientist in TCS Research, Tata Consultancy Services, India. His area of expertise encompasses IoT protocols, real-time communication over the Internet, 5G, signal-processing, base-band communication, etc. He has authored several peer-reviewed academic publications and has several granted patents in different geographies. He has been representing his organization in the Internet Engineering Task Force (IETF) for a long time and co-authored the first indigenous RFC from India. In the recent past he has been nominated as the IETF Resource person by Internet Society, Asia Pacific.

Team & Roles

DR. INDRAJIT DE *Advisor*

An academically oriented person having been in teaching profession for more than 18 years, Dr De is currently associated with MCKV Institute of Engineering in West Bengal. Dr. De is currently the elected Vice Chair of Internet Society Kolkata Chapter. He has graduated in Engineering from Calcutta University and subsequently completed his M.Tech in IT and Ph.D in CST from IIEST, Shibpur, India. Also he has many authored publications in major international journals and conferences and edited books. He has been reviewing some major journal articles in publications like Applied Soft Computing, Machine Vision and Applications, IEEE Access etc for many years. He has also contributed as one of the founder coordinators in IICB – a flagship Internet standards awareness building project in India funded by Internet Society and approved by MeitY(earlier DeitY), Govt, of India. He has visited as well actively participated in IETF 94, 103 and ISOC – APAC Chapter meetings many a times across different parts of the World.

Advisor SUBHENDU CHAKRABORTY

Shri Subhendu Chakraborty is a permanent member of the Law Enforcement Agency and has worked in various Central and State Police Directorate and has been attachment to various Police Training Colleges/Institites of national repute as the visiting faculty. He is a Ph. D. Research Scholar of the School of Computer Science and Technology, Jadavapur University and his area of research is detection of the business fraud in Social Media platforms. His working domain include investigation of the cyber crime cases including digital forensic of cell phone, IOT, cloud etc.He is among handful of Indian LEA representatives who have successfully completed five ATA (highest international courses for the law enforcement agencies) on internet investigation, cellular communications forensic consultation, digital forensics investigation, investigating Terrorist Incidents and investigation of dark web from U. S. Department of State. He has been engaged in cyber crime awareness programs for different stakeholders since last two decades.

PRIYATOSH JANA *Social Media*

He is an Assistant Professor of Computer Science and Engineering at Mallabhum Institute of Technology,India. Before that he was the Lecturer of Computer Science at Shivaji Science College, Nagpur, India.
He has experienced in organizing Seminars and workshops on Internet Governance and Technology related event.He is an Invited Speaker for capacity Building on Digital Inclusion, Accessibility & Empowerment, Internet Governance and ICT for Education etc towards a secured Digital Society.
He has not not restricted himself only within the conventional regular academic exercises and contributes extensively though his association with several professional bodies. His efforts for community work has been recognised by International organizations and he has been recognised as a fellow of ICANN. He has been an ISOC ambassador to Internet Governance Forum as well.

Finance TUSHARKANTI BHAKTA

Tushar Kanti Bhakt Retired from West Bengal Registration & Stamp Revenue Service in 2010 and hten started his entrepreneurial journey. He co founded in 2011 RABT Technologies Private Limited which developed be spoke applications. He has been a Trustee Member of INTERNET SOCIETY (ISOC) KOLKATA CHAPTER and has been Engaged as Co-Investigator for the Project "Capacity Building Program for Increased India's Participation in IETF- Internet Society – Kolkata Chapter (Indian IETF Capacity Building Program-IICB)" of the Department of Electronics and Information Technology (DietY), Ministry of Information Technology, Government of India.
He has been an active supporter of Internet Governance Activities and also manages the community of Senior Citizens and Parents and believe that their role in Internet Governance is important and useful.

Team & Roles

AMLAN CHAKRABORTY *Academic Interface*

Amlan Chakrabarti is a Full Professor in the A.K.Choudhury School of Information Technology at the University of Calcutta. He is an M.Tech. from University of Calcutta and did his Doctoral research at Indian Statistical Institute, Kolkata. He was a Post-Doctoral fellow at the School of Engineering, Princeton University, USA during 2011-2012. He has almost 20 years of experience in Engineering Education and Research. He is the recipient of prestigious DST BOYSCAST fellowship award in Engineering Science (2011), Indian National Science Academy (INSA) Visiting Faculty Fellowship (2014), JSPS Invitation Research Award (2016) from Japan, Erasmus Mundus Leaders Award from European Union (2017), Hamied Visiting Professorship from University of Cambridge, UK (2018) and Siksha Ratna Award by Dept. of Higher Education Govt. of West Bengal (2018). He has also served in various capacities in various higher education organizations both at national and international levels.

Academic Interface **SANKHAYAN CHOUDHURY**

He is a professor at University of Calcutta and his subjects are Software Engineering, DBMS, Networking. He has published more than 12 papers and also has got a patent on Energy Efficient Integrated Routing Protocol (E2IRP) ISA IN-800283.

SUBHRAJIT KABIRAJ *Designer*

In the year 2015 complete my 'Multimedia and Animation 'Course From JADAVPUR UNIVERSITY.
Develop visual concepts by hand or with computer software. Conceptualize Character Design, Illustrations, Logos, Digital Painting and making them Background.

Logistics **SOUVIK DEB**

Pursuing Data Engineering from BITS Pilani with a history of working in the information technology and services industry. Skilled in SQL, Cascading Style Sheets (CSS), Java, PHP Applications, and Networking. A professional with a Engineer's Degree focused in Computer Engineering from ST. Thomas' College of Engineering & Technology .

Hosted By:

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India Kolkata Chapter

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