AMBAR BAJPAI, Ph.D.

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Career Summary

A telecommunication researcher with experience of 15+ years in the field of communication engineering that applies technical, interpersonal, and administrative skills besides teaching, mentoring, and industry experience with excellent academic qualifications and international exposure in Asia-Pacific region.

Qualification Overview

Substantial experience in sophisticated research techniques and technologies: BER-performance, Trade-off analysis with hardware memory optimization, Algorithm modelling techniques.

Expertise in 5G and beyond lab research, data synthesis, classroom teaching, technical writing, and testing of audio/video files in benchmarked ST NOMADIC architecture.

Academic Background

Doctor of Philosophy (Ph.D.) in Electrical Engineering (December 2011 to August 2016)
- Department of Electrical Engineering, Chulalongkorn University, (QS-208, World), Bangkok, Thailand
- Course Work CGPA: 3.90/4.00
- **Dissertation Topic:** "Design and Performance Evaluation of Low Complexity Encoding Methods for LDPC Codes"

Master of Engineering (M. Eng.) in Communication Systems (December 2005 to March 2008)
- Department of Electrical and Electronics Engineering, Birla Institute of Technology and Science (BITS), (QS-194, Asia) Pilani, India
- Course Work CGPA: 8.49/10.00

Bachelor of Technology (B. Tech.) in Electronics and Communication (August 2001 to July 2005)
- Dr. A.P.J. Abdul Kalam Technical University, (formerly Uttar Pradesh Technical University), Lucknow, India
- Course Work percentage 70.2%

Current Status   July. 2019- Present

Associate Professor full time in Dept. of Electronics and Communication Engineering (ECE), Atria Institute of Technology at Bengaluru, India, **Program Developer and Coordinator** (ECE++ Artificial Intelligence/Machine Learning), ECE Research Center head, Expertise in NBA and NAAC (Indian accreditation agency), IEEE Branch counselor, Treasurer, Secretary, IEEE Bangalore section- Information Theory Society, Vehicular Technology Society, Faculty Advisor-MTT-S Student Branch Chapter.

Subjects Taught as an Instructor: Wireless and Cellular Communication, Computer Networks, Multimedia Communication, Principles of Communication Systems, Information Theory and Coding, Digital Communication, Microwave and Antenna Engineering, Computer, Communication and Network Lab, Communication Systems Lab, (Undergraduate level), Advanced Communication System (Postgraduate Level), UG major project Guided-12, PG major project Guided-1.

Past work exp.	Jan. 2019- May 2019

Associate Professor and Head of Department (HoD) full time in Dept. of Electronics and Communication Engineering, Indore Institute of Science and Technology (IIST), at Indore, India.
Subjects Taught as an Instructor: Analog Communication and Cellular Mobile Communication (Undergraduate level)

Past work exp.	June 2017-Nov. 2018

Assistant Professor full time in School of Engineering, Avantika University (MIT Pune Campus) at Ujjain, India. **India's first design centered university** based on **Project Based Learning** (PBL) and unconventional teaching-learning pedagogy.
Subjects Taught as an Instructor: course leads and course developer- Engineering Sciences, Physical World, Engineering Physics, and Introduction to UX/UI design (Undergraduate level).

Past work exp.	Dec. 2016-June 2017

Associate Professor full time in Electronics and Communication Engineering department at Sreenidhi Institute of Science and Technology (SNIST), Hyderabad, India (Affiliation with JNTU, Hyderabad, India).
Subjects Taught as an Instructor: Microwave and Optical Fiber Communication (Undergraduate level).

Research and Part-time work exp.	Dec. 2011- Dec. 2016

Ph.D. in the domain of Wireless Communications at Telecommunication Systems Research Laboratory (TSRL), Electrical Engineering Department, Chulalongkorn University (CU), Bangkok, Thailand.

Research, Funding, and Teaching Experience during Ph.D.
- **Visiting Faculty** (part-time) at King Mongkut's University of Technology North Bangkok (KMUTNB), Bangkok, Thailand from **Sept. 2013-Dec. 2016**.
  Subjects Taught as an Instructor, Electro Mechanical Energy Conversion, Computer in Everyday Life, and Digital Systems Laboratory (Undergraduate level).
- **Teaching Assistantship** in undergraduate subjects of "Introduction to communication", "Wireless Communication", "Principals of Communications" and "Telecommunication systems" in International School of Engineering (ISE), CU, Bangkok since January 2012-July 2016.
- Recipient of **Graduate School Scholarship** by the Graduate school office, CU, Bangkok since August 2014-June 2016.
- Recipient of prestigious Chulalongkorn University **90th year Research Scholarship** and **Overseas Academic Presentation Scholarship** to Moscow; Russia, Danang; Vietnam, Bangkok; Nakhon Nayok; Phuket; Thailand, Singapore, Okinawa; Japan, and Seoul; Busan; South Korea.

Current Research Domain:
Working on the cutting edge wireless communication channel codes for 5G and Beyond communication standards, further research interest on Error-control coding, LDPC codes, Polar codes Iterative decoding, Wireless communication system design, IEEE WLAN/Wi-Max/PAN Standards, and Visible light communication.

Additional Activities:
- **Volunteered** work in "The Asia-Oceania Top University League on Engineering" (AOTULE) 2013 meet http://www.aotule.eng.titech.ac.jp/

- **Organizing** student committee member of the 29th International Technical Conference on Circuits/Systems, Computers and Communications at Phuket, Thailand, 1-4 July 2014.

Assistant Professor full time in EECE department of SoET (School of Engineering and Technology) at The North Cap University, NCU (Formerly Institute of Technology and Management, (ITM) University), Gurgaon, India.

Subjects Taught as an Instructor

Graduate Level: Data communication network, Wireless communication
- Set up Optical communication lab and Wireless communication Lab.

Undergraduate Level: Communication system, Communication engineering, Wireless communication, Digital and analog communication, Satellite communication, Microwave engineering, Antenna and wave propagation.
- Set up of antenna designing laboratory in co-ordination with IIT-Delhi, India.

Achievements and Professional Services
- **Designed and authored** various labs and manuals of the ITM University, Gurgaon, India for the graduate students such as advanced digital communication Lab, Advanced optical communication Lab, Wireless and mobile communication Lab, Data communication Lab and Communication systems Lab for the undergraduate students.
- Mentored and supervised 2 graduation level thesis and 10+ undergraduate projects.
- Member of Center of academic excellence and planning (CAEP), managed all around, technical, non-technical activities in the University calendar, round the calendar year.
- Internal **auditor** in **ISO 9001: 2000** team.
- Mentored and organized activities of IEEE student branch.

University Community Involvement
- **Organized** Faculty development program (**WIPRO Mission 10X**) as a committee member.
- Student pre-placement interview committee member, conducted twice a year.
- External examiner member of parent university (Maharshi Dayananda University, Rohtak, India) in (2009-2010)
- **Volunteer** contribution as a faculty member, one of the largest non-profit organizations PRAYAS to protect the marginalized children, women and young people.
- Fund drafted and received from the state government organization (HREDA), Govt. of Haryana, India.

Curriculum design coordinator for B. Tech. and M. Tech. for the following courses
- Engineering Science (FNS 201)
- Engineering Physics (FNS 202)
- Physical World (FNS 102)
- Introduction to UX/UI Design (FNS 205)
- Wireless mobile communication (ECL508)
- Telecommunication network and management (ECL603)
- Advanced digital communication (ECL 507)
- Advanced digital signal processing (ECL 501)

Project Title	Integrate BlueZ Stack on Nomadik 8815 development Board and Streaming Audio over Bluetooth Link using A2DP Profile & Investigation On Video Codec H.264
Organization	**ST Microelectronics Pvt. Ltd. Bangalore, India** **http://www.st.com/web/en/home.html**
Duration	6 Months
Hardware/Tools	TRACE32(JTAG), Metrowerks, Linux kernel 2.6.16.2/2.6.20, Nomadik 8815 development kit, Source Insight, Kermit
Responsibility	System Integration, Code Development, Debugging and Testing

Projects Undertaken in M. Eng./B. Tech.

Simulation of wireless LAN 802.11a/OFDM in MATLAB
Hardware implementation of UNIPOLAR NRZ to BIPOLAR RZ Line Coder
Huffman codec emulation in the Code composer studio using TI DSP Starter Kit TMS320C5417
Digital clock simulation using ALTERA Nios-2 IDE
Speech recognition system in MATLAB, team leader responsibility for programming

Skills Set

Languages   :   C/C++ (Basics), Python
Protocols/Profiles   :   BlueZ, TCP/IP, SNMPv1/2, A2DP, HCl
Software's/Simulators: MATLAB 2021b, Simulink, CCS (TMS320C54X), Trace 32, JTAG, Orcad-12i, Optsim, MS office 365, Open office
Operating Systems   :   Windows 10/7, Linux-Monta Vista/Ubuntu
Microcontroller/Processor: Arduino Uno and Raspberry Pi

Professional Services and Awards/Grants

- Member of the Digital Affairs Committee (DAC), IEEE MTT-S Region-10 Asia-Pacific.
- Doctoral thesis evaluation committee member in Visvesvaraya Technological University, India.
- Treasurer of IEEE-Vehicular Technology Society (VTS)-Bangalore Section, and IEEE SIGHT Bangalore section ExeCom member, 2023.
- Received best student chapter awards in ITS and SPS Student Branch Chapter under leadership as IEEE STB Branch Counselor.
- Organizing committee member in various IEEE Conferences including IEEE HQ flagship conference ITW-2022.
- Student Branch Counselor and Founder Secretary (Information Theory Society) for Institute of Electrical and Electronics Engineers (IEEE) Bangalore Section, India
- Coordinator Indian Satellite Research Organization (ISRO-IIRS) distance learning Nodal center at AIT, Bengaluru.
- NIRF/NBA/NAAC (Ranking/Accrediting agencies) Coordinator in various organizations in India
- Reviewer for IEEE Access/Springer/ISI/Scopus indexed Journals and International Conferences
- Technical Program Committee member and Keynote speaker of various IEEE international conferences
- Actively worked as Organizing Chair/Convener/Coordinator for various National level Events, Faculty Development Programs, workshops conducted in Association with professional bodies.

- Subject Expert –Staff selection committee for various working organizations.
- GATE scholarship from the Government of India
- Senior Member of IEEE, (SM'IEEE)
- Fellow of Institute of Electronics and Telecommunication Engineers (F'IETE), India
- Lifetime member of Indian Society for Technical Education (L'ISTE), India
- Member, International Association of Engineers (M'IAENG), Hong Kong (SAR)
- Member, Institute for Engineering, Research and Publication, (M'IFERP) India
- ORCID ID, 0000-0002-6597-6528
- Scopus Author ID, 56425508400
- Web of Science Researcher ID AAV-8606-2020
- Awardee of Student grants from conference committee for paper publication in 29th ITC-CSCC 2014 Phuket, Thailand
- Awarded a bronze medal in the final year of B. Tech. Degree

Project Proposal Submitted
- Submitted project proposal on "Design and development of multi-parameters sensor module for water network management in KC valley project", through RPS-VTU Belgavi, India, 2021-2023 (INR 7,92,000/-)
- PI/CO-PI submitted proposals in VGST/ISRO in review status (INR 63,00,000/-).

Faculty Development Programme (FDP) Organized/Attended
1. Organized 200+ International events as Branch counselor, IEEE AIT STB, Secretary, IEEE-ITS Chapter, Bangalore section, Treasurer, IEEE-Vehicular Technology Society-IEEE Bangalore Section and ExeCom member SIGHT IEEE Bangalore Section.
2. Organized 5 day's FDP on "Advancement in RF, Microwave, Antenna and 5G Application" by IEEE Student branch and jointly with Atria Institute of Technology, Bengaluru, India, in association and IEEE MTT-S/AP Bangalore Section Joint Chapter, held from 27th - 31st March 2023.
3. Organized 5 day's FDP on "Analog and Digital IC Design: Semiconductor Industry Approach" by Atria Institute of Technology, Bengaluru, India, in association with Entuple Technologies, Bangalore and IEEE Bangalore Section, held from 26th -30th September 2022.
4. Completed one-week Faculty Training Program on "5G Wireless Communication Technology" organized by IEEE India Council from 28-30 July 2022.
5. Attended one-day iSET iLab FDP on "Innovation Harvesting and IP Protection" organized by Atria Institute of Technology, Bengaluru, India in association with INFOPACE management Pvt. Ltd., Bangalore, scheduled on 19 February 2022.
6. Completed one-week ATAL Sponsored FDP on "Architecture and Technologies for 5G and Beyond Wireless Networks" organized by Indian Institute of Technology (BHU) Varanasi, India scheduled on 16-20 August 2021.
7. Completed one-week ATAL Sponsored FDP on "Challenges in Adapting Machine Learning towards 5G/6G Communications" organized by VNR Vignana Jyothi Institute of Engineering & Technology, Hyderabad, scheduled on 9-13 August 2021.
8. Completed one-week ATAL Sponsored FDP on "Design Thinking" organized by Bharati Vidyapeeth College of Engineering, New Delhi, held from 21-25 June 2021.
9. Completed one-week AICTE sponsored Online Short-Term Training Program (STTP) on "Applied Soft Computing and Vision Machine Techniques" organized by Electronics and Communication Engineering department, Dr. M.G.R. Educational and Research Institutes in association with AICTE, New Delhi, India, 15-20 March, 2021.

10. Completed one-week AICTE recognized FDP on "Free and Open Source Software (FOSS) Tools for Effective Teaching-Learning" organized by Electronics and Communication Engineering department NITTTR, Chandigarh, India, 15-19 February 2021.
11. Organized 5 day's FDP on "Advancement of Image and Signal Processing" by Atria Institute of Technology, Bengaluru, India, in association with IEEE Bangalore Section and IETE Bangalore Section, held from 08-12 February 2021.
12. Completed one-week ATAL Sponsored FDP on "Artificial Intelligence, Machine Learning and Deep Learning" organized by University Visvesvaraya College of Engineering (UVCE), held from 01-05 February 2021.
13. Organized 3 day's FDP on "Role of IoT and Wireless Sensor Network in Knowledge Engineering" by Atria Institute of Technology, Bengaluru, India, in association with IEEE Bangalore Section, held from 14-19 September 2020.
14. Completed two-week FDP on "Demystifying 5G RF ASICs" by Ministry of Electronics and Information Technology (MeitY), Govt. of India and Indian Institute of Technology Guwahati held from 24 August to 04 September 2020.
15. Organized 3 day's FDP on "Research Writing in high-quality International Journals/Conferences" in Atria Institute of Technology, Bengaluru, India during 10-14 August, 2020.
16. Conducted webinar on "Role and Demand of 5G in Information and Communication Technology" in Atria Institute of Technology, Bengaluru, India, 30th April 2020.
17. Completed one-week AICTE recognized FDP on "Developing Creativity and innovation culture in institutions" organized by media engineering department NITTTR, Chandigarh, India, 20-24 July 2020.
18. Completed one-week AICTE recognized FDP on "Data Analytics with Python" organized by computer science and engineering department NITTTR, Chandigarh, India, 20-26 June 2020.
19. Completed one-week international FDP on "Digital Learning with Multidisciplinary Approaches (DLMA)" at organized by the department of computer applications, JSS Academy of Technical Education, Noida, India, 12-17 June, 2020.
20. Attended 2nd PAINLESS summer School on "Energy Efficiency and Machine Learning for Wireless Networks, followed by Communication and Engagement Training" from the European Union's Horizon 2020 research and innovation under Europe Training Project (ETP), University College London, technically cosponsored by IEEE Comsoc, UK, 1-2 June 2020.
21. Attended half day FDP on "Leveraging AI in 5G and Wireless Networks" organized by IEEE Comsoc, Bangalore, India, 31st May 2020.
22. Attended online workshop on "IEEE Reference Management Tool for Research Articles and Thesis writing" organized by IEEE Bangalore Section, India, 20th May 2020.
23. Attended online workshop on "IEEE Free MOOC to Complement Engineering Education" organized by IEEE Bangalore Section, India, 13th May 2020.
24. Completed one-week AICTE recognized FDP on "NBA Accreditation of Engineering" organized by mechanical engineering department NITTTR, Chandigarh, India, 11-15 May 2020.
25. Completed with "Elite + Silver Medal" NPTEL-AICTE 8-week course of "Evolution of Air Interface towards 5G" considered as 1 FDP in Odd Sem., 2018-19.
26. Completed with "Elite" in NPTEL-AICTE 12 week course of "Applied Optimization for Wireless, Machine Learning, and Big-Data" considered as 1.5 day's FDP in Even Sem., 2018-19.

Research and Publications-
https://scholar.google.com/citations?user=JOEuU2EAAAAJ&hl=en&oi=sra

- **International Journals**
  1. S. Galimutti, A. Roy, A. Ameeth, D. Bharadwaj, **A. Bajpai**, and M. Tolani, "Machine Learning based Adaptive Traffic Prediction and Control using Edge Impulse Platform", in sensors (Under Revision) (SCI/ISI IF 3.48).
  2. M. Tolani, **A. Bajpai**, A., Balodi, Sunny, R.K. singh,"Energy-Efficient Duty-Cycle Hybrid Medium Access Control Protocol for Wireless Sensor Network", *Wireless Pers Commun* (2023), 1-13. https://doi.org/10.1007/s11277-023-10448-7 (SCI/ISI IF 2.01).
  3. A. Parnianifard, S. Jearavongtakul, P. Sasithong, S. Poomrittigul, **A. Bajpai,** P. Vanichchanunt, L. Wuttisittikulkij, "Digital-Twins towards Cyber-Physical Systems: A Brief Survey" in *Engineering Journal,* Vol 26 No 9, Sep 30, 2022, DOI: https://doi.org/10.4186/ej.2022.26.9.47 (SCI/ISI IF 1.4).
  4. M. Tolani, **A. Bajpai**, A. Balodi, S. Sharma, and R.K. Singh, "Energy-Efficient Duty-Cycle Hybrid Medium Access Control Protocol for Wireless Sensor Network" *Research Square*; 2022, DOI: 10.21203/rs.3.rs-1225971/v1.
  5. **Ambar Bajpai,** "Performance Analysis of Non-Binary Low-Density Parity-Check Codes and Its Future Applications" in *IEIE Transactions on Smart Processing and Computing*, Vol. 7 (1), Feb., 2018, DOI: IEIESPC.2018.7.1.008. (Scopus)
  6. **Ambar Bajpai**, Gan Srirutchataboon, Piya Kovintavewat, and Lunchakorn Wuttisittikulkij, "A New Construction Method for Large Girth Quasi-Cyclic LDPC Codes with Optimized Lower Bound" in *Wireless Pers Commun,* vol. 91 (1), pp. 369-381 (2016), DOI 10.1007/s11277-016-3465-8 (SCI/ISI IF 2.01).
  7. Muhammad Saadi, **Ambar Bajpai**, Yan Zhao, Paramin Sangwongngam, Lunchakorn Wuttisittikulkij, "Design and Implementation of Secure and Reliable Communication using Optical Wireless Communication" in *Frequenz* 68. 11-12 (2014): 501-509. (SCI/ISI IF 0.73).

- **International Conferences**
  1. Neha B, M. Paritala, Neelesh M H, K. Pavan Kalyan, M.Tolani, and **A. Bajpai,** "Performance Analysis of Modified Dual Axis Solar Tracking System with LDR's for Home applications" in IEEE 5th International Conference on Advances in Electronics, Computers and Communications (ICAECC), at Bangalore, India, 7-8 September 2023. (Accepted)
  2. A. Munir, M. Siddiquie, S. Jearavongtakul, S. Shah, **A. Bajpai,** P. Kovintavewat, and L. Wuttisittikulkij, "Cellular Metaverse: Enhancing Real-Time Communication in Virtual Worlds" in IEEE 38th International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 2022), at Jeju, South Korea, 25-28 June 2023.
  3. M. Keerthana, E Gopichand, B. S. Prasad, and **A. Bajpai,** "On the Improved Storage Capacity in Power Generation Using Piezoelectric Sensors" in 4th Electric Power and Renewable Energy Conference (EPREC-2023), at Jameshdpur, India, 25th-27th May, 2023.
  4. M. Tolani, **A. Bajpai**, A. Balodi, S. Sharma, L. Wuttisittikulkij, and P. Kovintavewat, "Analysis of Soil for Crop Prediction Using Decision Tree and Random Forest Regression Methods" in IEEE 37th International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 2022), at Phuket, Thailand, 05-08 July 2022.
  5. M. Saadi, **A. Bajpai**, L. Wuttisittikulkij, and D. Z. Rodriguez, "Investigating the Role of Channel State Information for MIMO based VLC System" in IEEE 37th International Technical

Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 2022), at Phuket, Thailand, 05-08 July 2022.

6. I. S. Mirza, P. Sasithong, S. Jearavingtakul, N. Sinpan, P. Le-aidee, S. Chaudhary L. Wuttisittikulkij, **A. Bajpai**, P. Vanichchanunt, X. Wei, and X.Tang, "Reconstruction of Digital Chemistry Lab by Incorporating Virtual Reality Platform" in IEEE 37th International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 2022), at Phuket, Thailand, 05-08 July 2022.

7. P. Rchaithanakorn, J. Nitjaphanich, R. Annur, S. Chaudhary, A. Parnianifard, L. Wuttisittikulkij, P. Sasithong, P. Vanichchanunt, I. Yamyuan, S. Paripurana, and **A. Bajpai**, "Simulative investigation of real time video conferencing network by incorporating 5G Technology" in 1[4th] Regional Conference on Electrical and Electronics Engineering (RCEEE), at Bangkok, Thailand, 06-07 January, 2022.

8. M. Tolani, A. Balodi, and **A. Bajpai** "IoT based Agricultural Field Monitoring: Development, Design and Implementation," presented in National Conference on Flexible Academic Program (2021) Track-3: Potential areas for establishing Multidisciplinary Education Research Universities (MERU) organized by Indian Institute of Information Technology, Allahabad on December 03-04, 2021.

9. M. Tolani, **A. Bajpai**, S. Sharma, R. K. Singh, L. Wuttisittikulkij, and P. Kovintavewat, "Energy Efficient Hybrid Medium Access Control Protocol for Wireless Sensor Network" in IEEE 36th International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 2021), at Jeju, South Korea, 28-30 June 2021.

10. Pramod MS and **A. Bajpai**, "Automatic Traffic Density Control System With Wireless Speed Limit Notification", in IEEE 11th Computing and Communication Wokshop and Conference (CCWC-2021), at Las Vegas, USA, 27-30 January, 2021.

11. R. A. Ahsan, L. Wuttisittikulkij, S. Khichar, P. Sasithong, **A. Bajpai**, M. Saadi, and P. Vanichchanunt, "Comparative Analysis of Successive Cancellation and List Decoders Using Distinct Combinations of LLRs for Polar Codes", in IEEE 3rd International West Asian Symposium on Optical and Millimeter-wave Wireless Communication (WASOWC 2020), at Tehran, Iran, 24-25 Nov., 2020.

12. R. Ahsan, S. Khichar, Pruk Sasithong, **A. Bajpai,** L. Wuttisittikulkij, and Pisit Vanichchanunt, "A GUI based Self-learning Tool for Polar Codes using Successive Cancellation and List Decoders", in IEEE 4th International Conference on Advanced Information Technologies (ICAIT 2020) at Yangon, Myanmar, 4-5 Nov., 2020.

13. **A. Bajpai** and A. Balodi, "Role of 6G Networks: Use Cases and Research Directions", in IEEE International Conference on Humanitarian Technology, B-HTC, at Vijiyapur, India, 8-10 Oct., 2020.

14. N. Noomwongs, **A. Bajpai,** P. Phutthaburee, L. Wongpiya, A. Skulthai, T. Z. B. Maung, H. L. Aung, M. Saadi, and L. Wuttisittikulkij, "Design and Testing of Autonomous Steering System Implemented on a Toyota Ha:mo" in IEEE International Conference on Electronics, Information, and Communication (ICEIC), at Barcelona, Spain, 19-21 Jan. 2020.

15. H. L. Aung, T. Z. B. Maung, **A. Bajpai**, M. Saadi, and L. Wuttisittikulkij, "Learning Polar Codes using Python Program with Graphical User Interface" in IEEE 34th International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 19), at Jeju, South Korea, 23-26 June 2019.

16. S. Paliwal, **A. Bajpai**, and L. Wuttisittikulkij, "Study of Dynamic Time Warping Algorithm for Handwritten Character Recognition" in 33rd International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 18), at Bangkok, Thailand, 4-7 July 2018.

17. **A. Bajpai**, S. Paliwal, M. Saadi, P. Kovintavewat, and L. Wuttisittikulkij, "Recent Advancements in Forward Error Correcting Channel Codes" in 33rd International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 18), at Bangkok, Thailand, 4-7 July 2018.

18. **A. Bajpai**, P. Kovintavewat, and L. Wuttisittikulkij, "Performance and analysis of high girth Non-Binary Quasi-Cyclic LDPC Codes based on subtraction method", in 33rd International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 18), at Bangkok, Thailand, 4-7 July 2018.

19. A. Bairwa, Q. Le, P. Sasithong, C. Phongphanphanee, **A. Bajpai**, and L. Wuttisittikulkij, "Self-Learning Tool for LDPC Codes using Python", in 10th Regional Conference on Electrical and Electonics Engineering (RCEEE), at Surabaya, Indonesia, 28-29 August, 2017.

20. **A. Bajpai**, K. Woradit, P. Kovintavewat, S. Nakpeerayuth, and L. Wuttisittikulkij, "Performance and analysis of high girth column weight 3 Quasi-Cyclic Non-Binary LDPC Codes", in 32nd International Technical Conference on Circuits/Systems, Computers and Communications, (ITC-CSCC 17), at Busan, South Korea, 2-5 July 2017.

21. **A. Bajpai**, A. Kalsi, S. Nakpeerayuth, L. Wuttisittikulkij and P. Kovintavewat, "A greedy search based method with optimized lower bound for high girth QC-LDPC codes", in 13th IEEE International Symposium on Autonomous Decentralized Systems (ISADS), at Bangkok, Thailand, 22-24 March 2017.

22. N. Tuntibut, **A. Bajpai**, G. Srirutchataboon, L. Wuttisittikulkij, and P. Kovintavewat, "Performance and evaluation of regular (2, ρ) non-binary LDPC codes over GF(q) based on Protograph design and a new random construction method**,** in an International Conference of Multidisciplinary Approaches on UN Sustanionable Devlopments goals (UNSDG), at Bangkok, Thailand, 28-29 Dec. 2016.

23. N. Tuntibut, **A. Bajpai**, K. Mamat, P. Kovintavewat, and L. Wuttisittikulkij, "BER Performance Study of Column Weight Two Non-Binary LDPC Codes with Predetermined Girth", in 31th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 16), at Okinawa, Japan, 10 -13 July 2016.

24. **A. Bajpai**, A. Kalsi, L. Wuttisittikulkij, and P. Kovintavewat, "A subtraction based method to construct column weight 3 Quasi-Cyclic LDPC Codes", in 12th IEEE International Siberian Conference on Control and Communications (SIBCON-2016), at Moscow, Russia, 12 May -14 May. 2016.

25. A. Kalsi, **A. Bajpai**, L. Wuttisittikulkij, and P. Kovintavewat, "A Base Matrix method to construct column weight 3 Quasi-Cyclic LDPC Codes with high girth", in 15th IEEE International Conference on Electronics, Information and Communications (ICEIC 2016), at Danang, Vietnam, 27 Jan. -30 Jan. 2016.

26. **A. Bajpai**, P. Kovintavewat, and L. Wuttisittikulkij, "On the Lifting of Girth for Quasi-Cyclic LDPC Codes using Chinese Remainder Theorem", in 30th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 15), at Seoul, South Korea, 29 June -2 July 2015.

27. P. Vanichchanunt, **A. Bajpai,** and L. Wuttisittikulkij, "Performance Improvement for IEEE 802.11 LDPC Decoding with Transmit Diversity", in 30th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 15), at Seoul, South Korea, 29 June -2 July 2015.

28. N. Tuntibut, **A. Bajpai**, P. Kovintavewat, and L. Wuttisittikulkij, "Extended Decoding Performance of LDPC and NB-LDPC Codes with IEEE 802.11n Standard", in 30th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 15), at Seoul, South Korea, 29 June -2 July 2015.

29. M. Saadi, **A. Bajpai**, P. Vonlopvisut, L. Wuttisittikulkij, and Y. Zhao. "A Novel Two Dimensional Visible Light Positioning System Based on Received Signal Strength and Bi-literation", in 29th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 14), at Phuket, Thailand, 1-4 July 2014.

30. G. Srirutchataboon, **A. Bajpai**, T. Rattanakritanon, P. Kovintavewat, and L. Wuttisittikulkij. "A Design of Parity-Check Matrix with Maximized Local Girth for Quasi-Cyclic LDPC codes", in 29th International Technical Conference on Circuits/Systems, Computers and Communications (ITC-CSCC 14), at Phuket, Thailand, 1-4 July 2014.

31. **A. Bajpai**, M. Saadi, T. Phromsa-ard, P. Kovintavewat, and L. Wuttisittikulkij, "Performance and Analysis of Non-Binary LDPC Code Construction Using the Existing PEG Algorithm", in the 3rd International Conference on Wireless and Optical Communications (ICWOC 2014), at Nanyang Executive Centre, NTU Singapore, 24-26 May 2014.

32. G. Srirutchataboon, **A. Bajpai**, L. Wuttisittikulkij, and P. Kovintavewat, "PEG like algorithm for LDPC codes", in IEEE conference Proc. iEECON 2014, Chonburi, Thailand, 19-21 Mar. 2014.

33. **A. Bajpai**, G. Srirutchataboon, T. Phromsa-ard, Suvit Nakpeerayuth, P. Kovintavewat, and L. Wuttisittikulkij, "A Study of Non-Binary Low-Density Parity-Check Codes and Its Applications", EECON-35, Nakhon Nayok, Thailand, 12-14 December 2012.

- **Patents**
  1. **Ambar Bajpai** *et. al.*, An Australian patent filed: 2021103114 "An automatically height adjustable apparatus for growing plants using IoT sensors", June 2021

  2. **Ambar Bajpai** *et. al.*, An Australian patent granted: 2021102086 "Secure long range device to device communication method for IoT device using Low Power Wise Area Networks (LPWAN)", May. 2020.

  3. **Ambar Bajpai** *et. al.,* An Indian patent granted: 14363/2020-CO/L Literary/Dramatic "A novel IoT based disinfectant sanitizer tunnel against covid-19 using human detecting sensors and end to end security model", Dec. 2020.

- **Book Chapter**
  1. **Ambar Bajpai,** Manoj Tolani, and Arun Balodi, "Smart Healthcare System Using IoT Cloud and AI/ML", in book, "Communication Technologies in IoT and their Security Challenges: Present and future" (CTISC-2023), Springer Nature. (2023) (Accepted).

  2. M. Tolani, A. Ajasa, A., Balodi, **A. Bajpai**, Y. AlZaharani, and Sunny, "Advanced Sensor Systems for Robotics and Autonomous Vehicles", In: Azar, A.T., Koubaa, A. (eds) Artificial Intelligence for Robotics and Autonomous Systems Applications. Studies in Computational Intelligence, vol 1093. Springer, Cham. https://doi.org/10.1007/978-3-031-28715-2_14, 2023, (Scopus Indexed)

  3. **Ambar Bajpai**, Manoj Tolani, Arun Balodi, Sunny, and Lunchakorn Wuttisittikulkij, "The Role of 5G in Railway Applications" in book, Applications of 5G and Beyond in Smart Cities (1st ed.). CRC Press. https://doi.org/10.1201/9781003227861, (Eds.). (2023).

  4. Muhammad Saadi, **Ambar Bajpai**, Demóstenes Zegarra Rodríguez, "Traditional and Modern Techniques for Visible Light Positioning Systems in book, Ambar Bajpai and Arun Balodi, Applications of 5G and Beyond in Smart Cities (1st ed.). CRC Press. https://doi.org/10.1201/9781003227861, (Eds.). (2023).

  5. Manoj Tolani, Arun Balodi, **Ambar Bajpai**, and Rajat Kumar Singh. "Energy-efficient methods for railway monitoring using WSN." In Artificial Intelligence for Signal Processing and Wireless Communication, pp. 179-202., De Gruyter, 2022, DOI: 10.1515/9783110734652-009 (Scopus Indexed).

- **Book Editor/Author**
  1. **Ambar Bajpai** and Arun Balodi, Applications of 5G and Beyond in Smart Cities (1st ed.). CRC Press. https://doi.org/10.1201/9781003227861, (Eds.). (2023).

- **National Seminar/Workshop/Webinar**
  1. Participated in 100+ IEEE flagship and International/National webinars during COVID-19 pandemic for various technical and administrative learning.
  2. **A. Bajpai** and D. Sharma, "Applications of Quantum mechanics and nanotechnology", National Seminar on Nanotechnology: The Recent Advances and Applications, Institute of Technology and Management, Gurgaon, India, Nov. 2009.
  3. Participated in workshop on "Emerging topics in engineering", IEEE Gujarat Section, India, 24-25 July 2009.
  4. Delivered guest talk in the national level workshop on Microwave and its application at K.S. Jain Institute of Engineering and Technology, Modinagar, India, 12 March 2011.

Interpersonal Skills

Teamwork skills and leading abilities
Analytical mind with a rational and pragmatic approach to problem solving and idea making
Exceptional communication skills, cooperative, and hard working
Extensive experience working with cross-functional collaborative scientific and research teams
Strong presentation skills, effective leadership, collaboration & team building capabilities with enthusiasm to adjust latest technological trends.

References and LinkedIn QR Code

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