# Biodata

**Name**             **:** Vishal Goyal
**Official Address** **:** Professor
                     Department Of Computer Science,
                     Punjabi University, Patiala, Punjab, India.
                     Mobile: 9501096111
                     Residence: 0175-2280054
                     Email:vishal.pup@gmail.com

**Areas of Interest:** Natural Language Processing, Artificial Intelligence, Data Analysis, Data Science, Machine Learning, Database Management Systems, Psycho-Linguistics, Technology Development for Differently Abled Persons

**Editorial Board Memberships:**
1. Associate Editor, TALLIP

**Additional University Responsibilities:**
1. Deputy Director, Centre for E-Learning and Teaching Excellence, Punjabi University Patiala
2. Co-Coordinator, Centre for Artificial Intelligence and Data Science, Punjabi University Patiala
3. Coordinator, Research Centre for Technology Development for Differently Abled People, Department of Computer Science, Punjabi University Patiala
4. Nodal Officer, GeM Portal Operations, Punjabi University Patiala
5. Nodal Officer, iHRMS implementation, Punjabi University Patiala
6. Coordinator, NPTEL Local Chapter, Punjabi University Patiala
7. Nodal Officer, University Management Information System(UMIS), Punjabi University Patiala
8. Nodal Officer, File Tracking System, Punjabi University Patiala

**Honorary Positions:**
1. IT Consultant, The Maharaja Bhupinder Singh Punjab State Sports University, Patiala

**Educational Qualification:**
1. Ph.D. in Computer Science from Punjabi University Patiala.
   Title: Development of a Hindi to Punjabi Machine Translation System. Machine Translation is available freely for use at website http://h2p.learnpunjabi.org
2. M.Tech. (CS) with 70% from Rajasthan Vidyapeeth Deemed University, Udiapur, Rajasthan (AICTE Approved)
3. M.C.A. with 79% marks from Punjabi University,Patiala.
4. B.Sc.(CS)  with 75.5% marks from Panjab University,Chandigarh.
5. 10+2 (NM) with 72% marks from R.S.D. College, Ferozepur City
6. 10th with 82% marks from  D.C. Model Sr. Secondary School, Ferozepur City.

**Additional Qualification:**
1. Microsoft Certified Solution Developer (MCSD)

**Work Experience (Teaching/Research/Industry) :**
   **1.** Teaching Experience:
      a. Currently working at Department of Computer Science, Punjabi University, Patiala as Permanent Professor Since 23rd Feb, 2005. (Current Status)

b. 3 years 2 months at Doaba College Jalandhar at regular post as Lecturer.
2. Software Industry Experience : 2.2 years
a. 6 months at Networld Chandigarh as Software Developer
b. 1.6 years at DSF internet Services and Net4India Pvt. Ltd as Team Leader.

**Awards and Scholarships:**

1. State Award by Smt. Aruna Chaoudhury Ji during World Disability day on 3$^{rd}$ December 2019.

2. On Agarsen Jayanti, Honored by Maharani Parneet Kaur Ji, MP

3. State Award by Honorable Chief Minister Capt. Amrainder Singh Ji at 73th Independence Day State Level Celebration Function held at Jalandhar on 15-08-2019.

4. *Young Scientist Awardee 2005* at 8$^{TH}$ Punjab Science Congress at Punjab Science Academy, Punjabi University, Patiala.

5. Honorary Membership by North America Punjabi University Alumni Association, North America.

6. National Merit Scholarship Award by Punjab School Education Board , Mohali.

7. Biography published in Marquis Who's Who in the World (USA) 2009 in Science and Engineering.

8. Certificate of  APPRECIATION BY JETWI

**Recognitions:**

1. University of Edinburg, UK has recognized SMT based Hindi to Punjabi MT System as quality MT System and has installed on your University Server. Web Link: http://statmt.org/~vishal/hp/index.cgi

2. TDIL, DeitY, MoCIT, Govt. Of India has recognized SMT based Hindi to Punjabi MT System as quality MT System and has installed on their official server. Web Link: http://tdil-dc.in/hi2pu

**Funded Projects:**

1. Indian Languages Corpora Initiative (ILCI) Phase II as Principal Investigator for Punjabi Language, funded under the Technology Development for Indian Languages(TDIL) program by Ministry of Communications and Information Technology(MCIT), March 2012 to January 2017 worth 43.95 Lakh Rupees in Consortium Mode. (Completed)

2. Plagiarism Detection Tool Development for Indian Languages with Special Focus on Hindi and Punjabi, funded by R&D in Electronics Group (Innovation and IPR Division), Ministry of Electronics and Information Technology, Govt. of India, New Delhi from 30th August 2017 to 30th August 2019 worth Rs. 20 Lakh. (Completed)

3. Automatic Announcement System on Airports for Hearing Impaired People worth 10 Lakhs from SAAR. (Ongoing).

4. Two Research Projects related to NLP is about to start worth more than 1 crore rupees with DRDO. (One Sanctioned for 75 Lakh rupees in collaboration with Central University Jammu and One under process).

5. Three Projects related to technologies development for Hearing Impaired People worth 1.25 Cores have been approved under RUSA-2 , Funds awaited to start project.
6. Project related to technologies development for Hearing Impaired People worth 25 Lakhs has been principally approved by ICSSR under IMPRESS Scheme, Funds and approval letter awaited to start project.

**Patents:**
1. Braille Reading Device, Intellectual Property India, Application Number-202011048731

**TradeMark:**
1. **Woodmark:** Shodhmapak; **Proprietor:** MINISTRY OF ELECTRONICS & INFORMATION TECHNOLOGY; **Application Number:** 4056937; **Class / Classes:** 42; **Status:** Accepted & Advertised; **Journal No. :** 1976-0; **Journal Date:** 30/11/2020

**Copyrights**
1. Copyrighted Software Hindi to Punjabi Machine Translation System in 2011. Registration No:SW-4764/2011 Dated 21-03-2011.
2. Copyrighted Software Translator for English Text to ISL Synthetic Animations for Simple Sentences in 2018. SW-10501/2018
3. Copyrighted Software  - Generalized and Simplified Tool to Create HamNoSys Notation for Producing the Signs using Synthetic Animations for Hearing Impaired People, SW-11865/2018
4. Copyrighted Software - Indian Sign Language Dictionary using Synthetic Animations, SW-12425/2019
5. Copyrighted Software- Plagiarism Detection tool for Indian Language documents with Special focus on Hindi and Punjabi
6. Copyrighted Shodhmapak, Ministry of Electronics and Information Technology, Application Number: 4056937

**Invited Interview Conducted By Delhi Doordarshan Patiala:**
1. All India Radio on 3rd December 2019.
2. "Patiala Darpan", Available on Youtube at https://www.youtube.com/watch?v=gDMTj8diTn4
3. "Patiala Darpan", Available on Youtube at https://www.youtube.com/watch?v=r16tfEGdDNw

**Research projects Guided:**
1. Guiding Eighteen Ph.D. Research Scholars
2. Ph.D. Scholars Guided: 09 (Awarded)
3. M.Tech./M.Phil: 123(Completed)

**Contribution in MHRD Project:**
- EMMRC, PUP has recorded 11 video lectures on DBMS prepared by me as part of their MHRD Project. Uploaded on CEC Website for open access.
- Executed on MOOCs Programme on Cyber Laws available at Swayam Portal. The link of the course is https://swayam.gov.in/course/4002-cyber-law
- Executed on MOOCs Programme on Cyber Laws available at Swayam Portal. The link of the course is https://swayam.gov.in/courses/4952-cyber-law

**Keynote Address:**
1. FDP at Shaheed Bhaghat Singh College of Engineering, Ferozepur on 9-12-2019.
2. International Conference on Recent Innovation in Computing on 5th March 2018 organized by Department of Computer Science and IT, Central University of Jammu, Jammu.

3. National Seminar on "Recent Trends in Information Technology" at Amar Shaheed Baba Ajit Singh Jujhar Singh Memorial College,Bela, Roopnagar during 07-11-2015.
4. Faculty Development Programme on Emerging Trends in Artificial Intelligence at Global Institutes, Amritsar during 06-07-2015.
5. National Workshop on Statistical Machine Translation by Hieu Hoang,University of Edinburg, UK during 30-31st December 2014.
6. National Conference by Giani Zail Singh Engineering College PTU Campus, Bhatinda during 10th December 2014.
7. National Workshop on NLP and PHP, 05th Sept. 2012 to 07th Sept, 2012 organized by GGSCollege for Girls, Kharar.
8. National Conference on "Emerging Trends in I.T"., 24th March 2012 organized by Sikh National College, Banga.
9. National Conference on Recent Advances in Information Technology and its applications in Industry during 25-26th September, 2011 organized by Jammu University Bhaderwa Campus.
10. Three days National Workshop on On Computational Sanskrit during 11-13 November, 2011 organized by SD College(Lahore), Ambala Cantt.

**Session Chaired:**
1. Chaired Session during 4th International Conference on Computing Sciences-Feynman-100 held on 30th August 2018 organized by Lovely Faculty of Technology and Sciences, LPU, Punjab.
2. Chaired Session during AICTE Sponsored International Conference on Efficient Implementation of Digital India and Cashless Transactions during November 27-28, 2017.
3. Chaired Session on New Trends on Natural Language Processing on 19-12-2016 during 13th International Conference on NLP (ICON -2016) during December 17-20,2016 organized by IIT-BHU, Varanasi.
4. Chaired Technical Session on Information Technology during International Conference on the theme "He for She : A solidarity Movement For Gender Equality" organized by Women Study Center, Punjabi University Patiala on 11-12-2016.
5. Chaired Session as Panelist on 13-05-2016 during National Workshop on "IPR Awareness and Plagiarism Detection Tool for Indian Languages" held on 13th May ,2016 organized by Department of Computer Science, Punjabi University Patiala.
6. Chaired Technical Session on NLP on 06-05-2016 during National Conference on the theme "Pervasive Computing" organized by DAV College Bhatinda held on 06-05-2016.
7. Chaired Technical Session on NLP on 09-04-2016 during 3rd International Conference on "Computing Sciences- Shannon100" organized by LPU, Phagwara held on 08-09 April, 2016.
8. Chaired Technical Session on 27th March 2016 during SERB-DST Sponsored 2nd National Conference on "Role of Information Technology in Management and Engineering: Issues and Prospects" held on 26-27th August 2016 organized by MIMIT, Malout.
9. Chaired Technical Session on NLP on 27th Feb., 2016 during National Conference on the theme "Role of Mathematics and Computer Science in Advancement of Physics" organized by Govt. Degree College, Kathua held on February 26-27, 2016.

10. Chaired Technical Session on 06-02-2016 during UGC Sponsored National Seminar on "Latest Emerging Trends in Computer Science And Information Technology" organized by Bebe Nanaki Guru Nanak DevUniversity College,Mithra, Kapurthala held on 06-02-2016.
11. Chaired Technical Session on Women Empowerment: Technological Development on 11-12-2015 during 7th International Conference on the theme "Empowering Women Empowering Humanity" organized by Women's Studies Center, Punjabi University Patiala held on 11-12 December 2015.
12. Chaired Technical Session on 27-03-2015 during National Conference RITME 2015 organized by MIMIT Malout held on March 27-28, 2015.
13. Chaired Session during International Conference COMMUNE 2015 organized at University of Kashmir, Srinagar on 18-03-2015.
14. Chaired Session at ICON 2014 organized by Goa University Goa and IIIT Hyderabad during 18-21 December 2014.
15. Track Chair of Student Paper Contest at ICON 2014 organized by Goa University Goa and IIIT Hyderabad during 18-21 December 2014.
16. Chaired Session at National Conference by Giani Zail Singh Engineering College PTU Campus, Bhatinda during 10th December 2014.
17. Chaired Technical Session on 13-03-2012 during National Conference NCITSLR 2012 organized by Panjab University Regional Center, Shri Mukatsar Sahib held on March 12-13, 2012.
18. Chaired the Session at International Conference HPAGC-2011 during 19-20 July 2011 organized by Chitkara University, Rajpura.
19. Chaired Technical Session at International Conference on "Advanced Computing, Communication and Networks'11" organized by Universal Association of Computer and Electronics Engineers at Chandigarh during 2-3 June, 2011.
20. Chaired Technical Session at National Conference on "Latest Advancements in Science, Engineering and Research 2011" organized by Baba Farid College of Engineering and Technology, Bathinda during 25-26 May, 2011.
21. Chaired Session at UGC Sponsored International Conference organized by APJ College of Fine arts, Jalandhar during 25-26th Feb, 2011.
22. Chaired a technical sessions at National Conference RACS 2011 during 21-22 January 2011 organized by Baba Farid College, Bhatinda.
23. Chaired a technical sessions at International Conference on Role of Translation in Nation Building, Nationalism and Supra-Nationalism during 16-19 December 2010 organized by Indian Translators Association & LinguaIndia.
24. Chaired the Session at International Conference on "Technology and Information Systems" during 21 november 2010 organized by DAV College, Amritsar.
25. Chaired the Technical Session- I at National Conference on "Emerging Trendsin IT" during 28th August 2010 organized by Doaba College Jalandhar.
26. Chaired the Technical Session- III at National Conference on "Emerging Trendsin IT" during 28th August 2010 organized by Doaba College Jalandhar.
27. Chaired the Session at International Conference ISAN during 19-20 June 2009 organized by Chitkara Institute of Engineering and Technology, Rajpura.
28. Chaired Session at Baba Farid College, Bhatinda on NLP during 27 Nov,2009.
29. Chaired the Session at National Conference ISAN during 19-20 June 2009 organized by Chitkara Institute of Engineering and Technology, Rajpura.

**Invited Talks / Resource Person / Plenary Talks:**

1. Delivered invited talk (two sessions) on 09-12-2019 during FDP at SBSEC, Ferozepur.
2. Delivered Lecture on 06-10-2018 on ICT For Differently Able Persons during Orientation Course organized by UGC-HRD Centre, Punjabi University Patiala.
3. Delivered Lecture on 06-10-2018 on Plagiarism Detection Tool for Indian Languages during Orientation Course organized by UGC-HRD Centre, Punjabi University Patiala.
4. Delivered Lecture on 22-09-2018 on ICT For Differently Abled Persons during Short Term Course on Research Methodology organized by UGC-HRD Centre, Punjabi University Patiala.
5. Delivered Lecture on 22-09-2018 on Plagiarism Detection Tool for Indian Languages during Short Term Course on Research Methodology organized by UGC-HRD Centre, Punjabi University Patiala.
6. Delivered Lecture on 25-06-2018 on ICT For Differently Abled Persons during Refresher Course in Information Communication Technology organized by UGC-HRD Centre, Punjabi University Patiala.
7. Delivered Lecture on 25-06-2018 on Open Education Resources during Refresher Course in Information Communication Technology organized by UGC-HRD Centre, Punjabi University Patiala.
8. Delivered Invited talk on "Open Education Resources" on 16th March 2018 during National Seminar on "Technological Symposium For the Digital Transformation of India" held at Ch. Ishwar Singh Kanya Mahavidyala, Fatehpur-Pundri.
9. Delivered Invited talk on "Open Education Resources"during AICTE Sponsored International Conference on Efficient Implementation of Digital India and Cashless Transactions during November 27-28, 2017.
10. Delivered Invited talk through Skype on "Plagiarism Detection tools for Indian Languages" on July 15th , 2017 during International Congress on technology, Management and Social Sciences-17 held at Mississauga, Ontorio, CANADA during 15-16 July, 2017.
11. Delivered talk on "ICT for differently Abled Persons" on 23th March 2017 during One Week Workshop on "Emerging Trends in Computer Science" from 20-24th March 2017 organized by Department of Computer Science, Babasaheb Bhimrao Ambedkar University, Lucknow.
12. Delivered talk on "ICT for differently Abled Persons" on 11th March 2017 during UGC Sponsored National Conference on "Communications and Computing Technologies" on 11th March 2017 organized by ApeeJay College of Fine Arts, Jalandhar.
13. Delivered talk on "Indian Language Processing" on 17th December 2016 during 10th International Conference on "Open Source Systems and Technologies (ICOSST 2016) organized by Al-Khawaizmi Institute of Computer Science(KICS), University of Engineering and Technology, Lahore, Pakistan held on 17-19 December 2016. (Through Skype).
14. Delivered talk on "NLP and ICT for differently Abled Persons" on 27th September 2016 during One Week Workshop on "Soft Computing, Pattern Recognition and Image Processing" from 27th September - 01st October 2016 organized by Department of Computer Science and Engineering, Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur.
15. Delivered talk on "NLP For rural people" on 31st August 2016 during International Conference on "Recent Trends in Computing" held from 30-31

August 2016 organized by Department of Computer Engineering, Punjabi University Patiala.

16. Delivered talk on "NLP - Present Scenario in India" on 27th August 2016 during SERB-DST Sponsored 2nd National Conference on "Role of Information Technology in Management and Engineering : Issues and Prospects" held on 26-27th August 2016 organized by MIMIT, Malout.

17. Delivered talk on "ICT for differently Abled Persons" on 07th July 2016 during Refresher Course in Information Technology (ID) conducted from June 23 to July 13, 2016 by UGC-HRD Center, GNDU, Amritsar.

18. Delivered talk on "Punjabi Language Processing" on 07th July 2016 during Refresher Course in Information Technology (ID) conducted from June 23 to July 13, 2016 by UGC-HRD Center, GNDU, Amritsar.

19. Delivered talk on "ICT for differently Abled Persons" on 04th June 2016 during 55th Refresher Course in Professional Courses conducted from May 23 to June 11, 2016 by UGC-HRD Center, Punjabi University, Patiala.

20. Delivered talk on " ICT for differently Abled Persons" on 1st June 2016 during One Week Workshop on "Recent Advances in Image Processing and Natural Language Processing(RAINLP 2016" from 30th May - 3rd June 2016 organized by Department of Computer Science and Engineering, Dr. B R Ambedkar National Institute of Technology, Jalandhar, Punjab.

21. Delivered talk on "ICT for differently Abled Persons" on 26th March 2016 during UGC Sponsored National Seminar on "Emerging Trends in Data Sciences and Artificial Intelligence" held on 26th March 2016 organized by BGSBU, Rajouri, J&K.

22. Delivered talk on "Technological Developments of Indian Languages" 27th Feb., 2016 during National Conference on the theme "Role of Mathematics and Computer Science in Advancement of Physics" organized by Govt. Degree College, Kathua held on February 26-27, 2016.

23. Delivered talk on "Role of IT in University Management" on 24th February 2016 during 3-day National Workshop on "Trends in Information technology in University Management" organized by AIU at Deshbhagat University, Mandi Gobindgarh held on 24-26th Feb,2016.

24. Delivered talk on "AI and Natural Language Processing" on 23-02-2016 during National Seminar under the aegis of CSI, Student Chapter organized by Department of CSE, CGC College of Engineering, Landran, Mohali held on 23rd Feb,2016.

25. Delivered talk on "Natural Language Processing: An Indian Language Scenario" on 9th February 2016 during 2nd International Digital Literacy Forum held on 9-15 Feb., 2016 organized by Bhutta College of Education, Bhutta, Ludhiana.

26. Delivered talk on "Punjabi Language Processing: Situation, Challenges and Solutions" on 06-02-2016 during UGC Sponsored National Seminar on "Latest Emerging Trends in Computer Science And Information Technology" organized by Bebe Nanaki Guru Nanak DevUniversity College,Mithra, Kapurthala held on 06-02-2016.

27. Delivered talk on "Natural Language Processing" on 19th December 2015 during Refresher Course in Mathematical Sciences (ID) conducted from December 08 to December 29, 2015 by UGC-HRD Center, Jammu University Jammu at Department of Computer Science and IT.

28. Delivered talk on "Research Areas in Natural Language Processing" on 19th December 2015 during Refresher Course in Mathematical Sciences (ID)

conducted from December 08 to December 29, 2015 by UGC-HRD Center, Jammu University Jammu at Department of Computer Science and IT.

29. Delivered talk on "Indian Language Processing" on 18th December 2015 during 9th International Conference on "Open Source Systems and Technologies (ICOSST 2015) organized by Al-Khawaizmi Institute of Computer Science(KICS), University of Engineering and Technology, Lahore, Pakistanheld on 17-19 December 2015. (Through Skype).

30. Delivered talk on "Punjabi Language Processing: Situation, Challenges and Solutions" during Faculty Development Programme on Emerging Trends in Artificial Intelligence at Global Institutes, Amritsar during 06-07-2015.

31. Delivered talk on "Punjabi Language Processing" on 09-05-2015 during One week long National Workshop on "Research Methodology" organized by Department of Punjabi, Punjabi University Patiala held on 04-05-2015 to 11-05-2015.

32. Delivered talk on "Punjabi Language Processing" during One week long National Workshop on 21-04-2015 organized by DAV College, Jalandhar.

33. Delivered talk on "Punjabi Language Processing" during International Conference COMMUNE 2015 organized at University of Kashmir, Srinagar on 17-03-2015.

34. Delivered talk on "Natural Language Processing" on 27-03-2015 during National Conference RITME 2015 organized by MIMIT Malout held on March 27-28, 2015.

35. Delivered talk on "Punjabi Language Processing" during National Workshop in Women Studies Center, Punjabi University Patiala on 01-03-2015.

36. Delivered talk on Emerging Research Areas in Computer Sc. during National Conference on Indian Languages during 17-18 January 2015 at CUSAT, Cochin.

37. Delivered talk on Emerging Research Areas in Computer Sc. on 18th June 2016 (Pre Lunch) during FDP organized by RIMT, Mandi Gobindgarh.

38. Delivered talk on Emerging Research Areas in Computer Sc. on 18th June 2016 (Post Lunch) during FDP organized by RIMT, Mandi Gobindgarh.

39. Conducted Session on Statistical Machine Translation (31st December, 2014) at National Workshop on SMT: MOSES Tool Kit organized by Chitkara University in collaboration with Punjabi University Patiala during 30-31st December 2014.

40. Delivered talk on Natural Language Processing and Machine translation among Indian Language Pairs on 7th March, 2014 at National Workshop organized by Department of Computer Applications, CDLU, Sirsa.

41. Delivered talk on Machine Translation at National Workshop organized by GNDEC, Ludhiana on 16th January, 2014.

42. Delivered talk on Machine Translation at National Workshop organized by Thapar University, Pataila on 9th Dec, 2013.

43. Delivered talk on Machine Translation at National Workshop organized by Punjabi University Patiala on 13th Nov, 2013.

44. Delivered talk on NLP at LPU, Phagwara on 09-11-2012.

45. Delivered plenary talk on NLP Projects Showcase and chaired session at Kishtwar Campus, Jammu University, Kishtwar during 2-day National Seminar on IT and its applications in Industry during 03-04 Nov, 2012.

46. Delivered two talks as Resource Person on 08-Oct-2012 during Refresher Course in Computer Science (ID) organized by ASC, Banaras Hindu University, Varanasi.

47. Delivered talk on "Machine Translation" at RR Bawa College for Girls, Batala on 4th August 2012 during UGC sponsored National Seminar on "Image Processing" held on 04th August 2012.
48. Delivered talk on "Machine translation Basics and its implementation" on 23$^{rd}$ May 2012 at CT Institute of Engineering and Technology, Shahpur Campus, Jalandhar during 1-Week FDP funded by PTU, Jalandhar.
49. Delivered talk on "Career Ahead for IT Students" at PMN College, Rajpura on 20$^{th}$ March, 2012 during 1-day workshop on Entrepreneurship.
50. Delivered talk on "Emerging Research Areas in Computer Science" at KMV, Jalandhar on 1$^{st}$ March 2012 during 2-day UGC sponsored National Seminar on "Social Impact of Artificial Intelligence". held on 1-2 March2012.
51. Delivered Talk on "Machine Translation on NLP" on 04-01-2012 during 3-day Induction cum Training Programme organized by UCoE, Punjabi University Patiala held on January 03-05-2012.
52. Delivered **two talks** as Resource Person on 17-Dec-2011 during Refresher Course in Computer Applications organized by ASC, Jammu University, Jammu.
53. Invited talk during Computer and IT Session on 13$^{th}$ October during 7$^{th}$ J&K Science Congress Organized by Jammu University, Jammu during 13-15$^{th}$ October 2011.
54. Delivered Talk on "Machine Translation" on 02-08-2011 during PTU Sponsored FDP organized by Rayat and Bahra Institute of Engg. and Bio Technology held on August 01 to 06 ,2011.
55. Delivered Talk on "Natural Language Processing" on 25-07-2011 during PTU Sponsored FDP on "ETCIT" organized by Rayat Institute of Engineering and Information Technology, Railmajra held in July-August 2011.
56. "Natural Language Processing: New research area in Computer Science" on 21st June, 2011 at DAVIET, Jalandhar.
57. Invited talk on "Machine Translation and Demonstration of various MT Systems" at International Conference on "Advanced Computing, Communication and Networks'11" organized by Universal Association of Computer and Electronics Engineers at Chandigarh during 2-3 June, 2011.
58. Invited talk on "Machine Translation and Demonstration of various MT Software" at National Conference on "Latest Advancements in Science, Engineering and Research 2011" organized by Baba Farid College of Engineering and Technology, Bathinda during 25-26 May, 2011.
59. Invited talk at UGC Sponsored International Conference on Communications and Computing Technologies organized by APJ College of Fine arts, Jalandhar during 25-26$^{th}$ Feb, 2011.
60. Invited talk on "Machine Translation Systems" at UGC Sponsored National Conference on "Societal Impact of Computers" during 29th January 2011 organized by Pandit Mohan Lal SD College for Girls, Gurdaspur.
61. "Natural Language Processing: New research area in Computer Science & IT" on 28$^{th}$ January, 2011 (Afternoon) at DAVIET, Jalandhar.
62. "NLP : Language barrier for communication demolished with technological advancement" on 28$^{th}$ January, 2011 (before noon) at DAV College, Jalandhar.
63. "Demonstration of Hindi to Punjabi Machine Translation System and Natural Language Processing" at National Conference RACS 2011 during 21-22 January 2011 organized by Baba Farid College, Bhatinda.
64. Invited Talk at SGN Khalsa P.G. College, Sri Ganganagar on NLP during 13 Nov,2010.

65. "Natural Language processing", at DPD College, Zira on 8th November, 2010.
66. "Use of Indian Langauges in E-Commerce" at UGC Sponsored National Seminar organized by Khalsa College for Women, Ludhiana on 30th October, 2010.
67. "Demonstration for Hindi to Punjabi Machine Translation System" at UGC Sponsored National Seminar organized by Khalsa College for Women, Ludhiana on 30th October, 2010.
68. Invited Talk at Dev Samaj College for Women, Ferozepur City on NLP during 19 July, 2010.
69. Handled one Full Day Sessions and Practical Lab Session at the workshop on "NLP- Next Generation for World Communication" organized by CIET, Rajpura during 21-23rd Dec, 2009.
70. Invited Talk at Baba Farid College, Bhatinda on NLP during 27 Nov, 2009.
71. B. D. Arya Girls College, Jalandhar Cantt on " NLP: A new research area to explore" during 09-11-2009 Before noon.
72. D.A.V. College, Jalandhar City on "Scope of NLP for M.Sc.(CS) Students" during 09-11-2009 After noon.
73. Doaba College, Jalandhar City on "Hindi to Punjabi Machine Translation System" during 10-11-2009 Before noon.
74. Punjabi University Neighbourhood Campus, Rampura Phool on DBMS
75. Rural Development Center for BDOs, Nabha **(Three Times)**
76. Desh Bhaghat Institute of Management and I.T., Mandi Gobindgarh on TOC during 15th Nov, 2009.
77. Mata Gujri College, Fategarh Sahib on TOC during 4th Nov., 2009.
78. Presented Demonstration for Hindi-Punjabi Machine Translation System and delivered talk on "How to write research paper" during AICTE Sponsored Staff Development Programme during 11 June 2009 to 25th June 2009 organized by DCS, BGSBU, Rajouri, J&K
79. Presented Demonstration for Hindi-Punjabi Machine Translation System and invited as panelist for discussing integration of FP in Curriculums at "Deep Drive Faculty Development Programme" during 23-25th June, 2009 organized by Infosys Technologies at Chitkara Campus, Sector 25, Chandigarh.
80. Amardeep Singh Shergill Memorial College, Mukandpur, Nawanshahr on Survey of NLP Projects in India during State Level Seminar on "Emerging Trends in IT" during 16-03-2008.
81. HMV, Jalandhar through Video Conferencing from Patiala Reliance Center on Research areas in Computer Science0n 20-11-08.
82. Doaba College, Jalandhar on NLP during 22nd November 2008.
83. Baba Gulam Shah Badshah University, Rajouri, J &K during AICTE Sponsored National Seminar on "Current Trends in Mobile Computing" during 28-29 November 2008.
84. Baba Gulam Shah Badshah University, Rajouri, J &K on TOC
85. Baba Gulam Shah Badshah University, Rajouri, J &K on TOC during September 2007.
86. KMV Jalandhar during National Seminar on "Embedded Systems" during January 24-25 20015.

**Professional Bodies Memberships:**
1. Life Member of Computer Society of India.
2. Life Member of ISTE, New Delhi. (LM 104132)
3. Life Member of The Indian Science Congress Association, Kolkata (L25416)

4. Life member of Punjab Academy of Sciences(L-619)
5. Reviewer for COLING 2012 organized by IIT Bombay, India.
6. Nominated as Single Point of Contact (SPoC) for managing Life and Communication Skills Compulsory Course run at various Punjabi University Affiliated colleges.
7. Editor-in-chief for Research Cell: An International Journal of Engineering Science, Anu Books,Merrut.
8. Editorial Board member for Journal of Emerging Trends in Web Intelligence (JETWI)
9. Editorial Board Member for "Atti della Fondazione Giorgio Ronchi", Italy.
10. Editorial Board Member for "Journal of Emerging Trends in Computing and Information Sciences (ISSN 2079-8407)".
11. Editorial Board Member and Publicity Committee Member for IJCSI, France. (Impact Factor 0.242)
12. Reviewer for 'IJCSIS 2009' Technical Committee
13. Reviewer for African Journal of Information and Communication Technology
14. Guest Editor of JETWI Special issue May 2010.
15. Reviewer for IJITKM, Kurukshetra University, Kurukshetra, Haryana,India
16. Editorial Board Member for "DAV Journal of Computing", Jalandhar, Punjab.
17. Advisory and Organizing Committee Member for NLP Workshop to be organized by CIET, Rajpura during 21-23 December,2009.
18. Board of Studies Member for PTU, Jalandhar.
19. Board of Studies Member of Central University of Himachal Pardesh.
20. Board of Studies Member of Islamic State University of Science and Technology, Anantapora, J&K.
21. Board of Studies Member for Mata Gujri College, Fatehgarh Sahib (An Autonomous College).
22. Board of Studies Member for Undergraduate and Post Graduate Courses for GSSDGS Khalsa College (An Autonomous College), Patiala.

**Software Developed (Completed):**
1. Development of Machine Translation Software for automatic translation of English Text to ISL Synthetic animations.
2. Development of Plagiarism Detection Software for Hindi texts.
3. HMM Based Punjabi Chunker
4. Development of English-Punjabi Parallel Corpus and its management tool
5. Automatic Question Generation System for Punjabi
6. English↔Punjabi Machine Transliteration System
7. Automatic Extraction of MWEs from English-Punjabi Parallel Corpus
8. Development of Text Prediction System for Somali Language
9. Development of Text Prediction System for Amrahic Language

10. SMT Post Editing System for SMT Based Hindi to Punjabi MT System
11. Development of Hindi to Punjabi Machine Translation System using Statistical Approach.
12. Quantitative analysis of websites developed in Hindi and Punjabi.
13. Development of a system for translating Technical Hindi text into Punjabi.
14. Development of Plagiarism Detection Software for Punjabi texts.
15. Computerization of Research Cell, Punjabi University, Patiala
16. Computerization of Alumni Association, Punjabi University, Patiala
17. Computerization of Board Of Studies Meeting Process, Department of Computer Science, Punjabi University, Patiala.
18. Department of Computer Science Website
19. Department of Computer Science Placement Cell
20. Developed Hindi to Punjabi Machine Translation System with an accuracy of about 90% available online for use at website http://h2p.learnpunjabi.org. **Copyrighted in 2011.**
21. Automatic Sentence Alignment Of Bilingual Parallel Corpora For Hindi-Punjabi Language
22. Extraction of Collocations in Hindi Text Corpus
23. Hindi Morphological analyzer and generator (Windows Based)
24. Extracting Proverb From Hindi Text And Translating it into Punjabi Text
25. Hindi to Punjabi Transliteration System
26. Development of Algorithm for Sandhi Viched of Compound Hindi Words.
27. Development of N-Gram Algorithm solution for Hindi Word Sense Disambiguation
28. Development Of An Algorithm For Unsupervised Learning Of Morphology For Hindi Language
29. Development of Algorithm for Hindi Text Normalization
30. Development of algorithm for extracting Named Entities from Hindi Text
31. Development of Font Converter for Non Unicode Hindi text to Unicode Encoding and reverse
32. Development of Improved Algorithm for Automatic Word Alignment for Hindi-Punjabi Parallel Corpus
33. Development of Hindi-Punjabi Parallel Corpus using existing Hindi to Punjabi Machine Translation System
34. Development of Name Entity Recognition System for Hindi Corpus
35. Development of Sentiment analyzer for Punjabi.
36. Development of Punjabi to English transliteration system for common nouns.
37. Development of a system for extracting Hindi Proverbs from Hindi text and translating in Punjabi.
38. Development of Hindi Stemmer (Windows Based) for handling OOV words in Hindi to Punjabi MT System
39. Development of Hindi text automatic Font Identification and converting it into Unicode.
40. Development of Extracting Named Entities from Urdu text.
41. Development of Hindi POS Tagger (Windows based)
42. Development of Urdu to Punjabi Machine Translation System using hybrid approach.
43. Development of Software for Converting Text to ISL video for deaf and dumb persons.

**Administration Experience:**

1. Organized 14 days Refersher Course in ICT as Course Coordinator for faculty members from All over India from 10-08-2020 to 24-08-2020 organized by UGC-HRDC, Punjabi University Patiala
2. Organized 8 days Online Workshop for all Special Educators of Punjab working under Samagra Sikhya Abhiyan on "Online Training on Multi Disability Management".
3. Organized One day National level Online Seminar on Providing Education to Children with Special needs during COVID-19 Pandemic in collaboration with Samagra Sikhya Abhyan.
4. Organized National Level seminar on 11-03-2020 on Technology Development for Differently Abled Persons as Covener of this Seminar.
5. Additional Responsibility of Deputy Director, Centre for E-Learning and Teaching Excellence, Punjabi University Patiala.
6. Additional Responsibility of Coordinator, Research Center for Technology Development for Differently Able People, Department of Computer Science, Punjabi University Patiala.
7. Additional Responsibility of Coordinator NPTEL-Swayam Local Chapter, Punjabi University Patiala.
8. Additional Responsibility of Co-Coordinator, Center for Artificial Intelligence and Data Science, Punjabi University Patiala.
9. Additional Responsibility of Coordinator, GeM Portal Registration Process, Punjabi University Patiala.
10. Organized International Conference on NLP (ICON 2018) from 15-18 Dec, 2018.
11. Organized as Program Chair - National Workshop on "IPR Awareness and Plagiarism Detection Tool for Indian Languages" held on 13th May, 2016 organized by Department of Computer Science, Punjabi University Patiala.
12. Organized as Program Chair - International Conference on Natural Language Processing for Regional Languages – regICON 2015 at Department of Computer Science, Punjabi University Patiala from 18-Spet-2015 to 19-Sept-2015.
13. Organized as Program Chair - International Conference on Natural Language Processing for Regional Languages – regICON 2015 at Department of Computer Science, Punjabi University Patiala from 18-Spet-2015 to 19-Sept-2015.
14. Organized 7-day National workshop on "Multilingual Technologies" at Department of Computer Science, Punjabi University Patiala from 11-Nov-2013 to 17-Nov-2013.
15. Organized 3-day National Workshop on ILCI at Punjabi University Patiala from 19-21 April 2013.
16. Organized 7-day National workshop on "Digital Image Processing using MATLAB" at Department of Computer Science, Punjabi University Patiala from 29-Nov-2012 to 05-Dec-2012.
17. Organized 3-day National workshop on "Train the Trainer: Life and Communication Skills" during 12-14th March 2011 at Department of Computer Science in Collaboration with Placement Cell, PUP and Infosys Technologies Limited.

18. Organizing International Conference – ICISIL 2011 at the department of Computer Science, Punjabi University, Patiala during 9-11 March, 2011. Website: http://www.icisil2011.org

19. Organized National Conference – RAFIT 2009 at the department of Computer Science, Punjabi University, Patiala during 9-10 April,2009. Website: http://www.punjabiuniversity.ac.in/rafit2009.html

20. Acted as Hostel Warden for Shaheed Bhagat Singh Hall , Punjabi University Patiala from 01-09-2006 to 06-09-2007.

21. Acting as Associate Placement Officer for M.C.A. and M.Tech. Students of DCS, PUP. and Incharge Placements for All Science Streams in University.

22. Acting as Executive member for Central Placement Cell of Punjabi University, Patiala appointed by Honorable Vice Chancellor the University.

23. Acting as Coordinator for Departmental Alumni Association.

24. Acting as Executive Member of Central University Alumni Association of Punjabi University, Patiala.

25. Acted as Organization Secretary for National Level Conference RAFIT 2009 at department of Computer Science, Punjabi University, Patiala.

26. Inspected Number of Punjabi University, Patiala affiliated colleges for giving affiliations to colleges for starting new courses.

27. Acted as Organization Secretary for National Level Seminar RAFIP 2009 at department of Computer Science, Punjabi University, Patiala.

28. Acted as Organization Secretary for International Conference on Information System for Indian Languages (ICISIL 2011) during 9-11 March 2011 at department of Computer Science, Punjabi University, Patiala.

**Workshops Attended:**
2. 1 week workshop at Doaba College , Jalandhar
3. 1 week short term course on "VB.Net" at NITTTR, Chandigarh.
4. 2-week workshop on Natural Language Processing at IIIT, Hyderabad.
5. 3-day workshop "Train the Trainer" by Infosys Technologies, Chandigarh.
6. 11- Day Faculty Enabled Program on Foundation Programme By Infosys Technologies, Chandigarh.
7. 3-day workshop "Train the Trainer" By Infosys Technologies, Chandigarh.
8. 3-day workshop By Infosys Technologies, Chandigarh.
9. 3- Day Faculty Enabled Program on Soft Skills By Infosys Technologies, Chandigarh.
10. 2-Day workshop on SPSS at Thapar University, Patiala

**Books Published:**

1. Big Data Analytics and Intelligence: A Perspective for Health Care, Emerald Publishing Limited, ISBN: 9781839091001
2. Modern Techniques for Agricultural Disease Management and Crop Yield Prediction, IGI Global, ISBN: 9781522596332
3. "Research and Publication Ethics", Shroff Publication and Distributors". Under Publication.
4. "A Simplified Approach to Data Structures", Shroff Pub & Dist. Pvt. Ltd, ISBN : 9789351105312
5. Information Systems for Indian languages, Springer CCIS 139, Germany, ISBN: 978-3-642-19402-3, ISSN:1865-0929.
6. Hindi to Punjabi Machine Translation System- MT System between Closely related Language Pair, Lambert Academic Publishing, Germany, ISBN : 978-3-8433-7267-1
7. "Introduction to Computer Education", Twenty First Century Publications.

**Chapters Published:**

1. Neetika, Goyal V., Rani S. (2021) Automatic Understanding of Code Mixed Social Media Text: A State of the Art. In: Goar V., Kuri M., Kumar R., Senjyu T. (eds) Advances in Information Communication Technology and Computing. Lecture Notes in Networks and Systems, vol 135. Springer, Singapore. https://doi.org/10.1007/978-981-15-5421-6_10
2. Mamoon Rashid, Vishal Goyal, Harjeet Singh, Shabir Ahmad Parah, Aabid Rashid Wani, "Big Data based Storage and Processing Model in Internet of Things for Improving Performance in Health Care Systems", Healthcare Paradigms in The Internet of Things Ecosystem, Elsevier, SCOPUS, November 2020. DOI: 10.1016/B978-0-12-819664-9.00003-X
3. Singh M., Goyal V., Raj S. (2021) Sentiment Analysis of English-Punjabi Code-Mixed Social Media Content to Predict Elections. In: Goar V., Kuri M., Kumar R., Senjyu T. (eds) Advances in Information Communication Technology and Computing. Lecture Notes in Networks and Systems, vol 135. Springer, Singapore. https://doi.org/10.1007/978-981-15-5421-6_9
4. Mamoon Rashid, Harjeet Singh, Vishal Goyal, Nazir Ahmad, Neeraj Mogla "Efficient Big Data based Storage and Processing Model in Internet of Things for Improving Accuracy in Industrial Processes", Security and Privacy Issues in Sensor Networks and IoT, IGI Global, SCOPUS, ACM, Pages 215-230, October 2019. DOI: 10.4018/978-1-7998-0373-7.ch009
5. Mamoon Rashid, Vishal Goyal, Shabir Ahmad Parah, Harjeet Singh, "Drug Prediction in Health Care Using Big Data and Machine Learning", Hidden Link Prediction in Stochastic Social Networks, IGI Global, Scopus, ACM, February 2019. DOI: 10.4018/978-1-5225-9096-5. ISBN13: 9781522590965.

**Papers Published in Journals:**

1. Deepali, Vishal Goyal, Lalit Goyal, "Translation of English Complex/Compound Sentences into Indian Sign Language", Research Cell: An International Journal of Engineering Sciences. 2020. Vol33, pp.1-14

2. Deepali, Goyal V., & Goyal L.," Rule Based Translation of English Complex/Compound Sentences into Indian Sign Language Synthetic Video Animations" Alochana Chakra Journal Vol. 9 pp. 339-348 2020.

3. Mamoon Rashid, Harjeet Singh, Vishal Goyal,2020,The use of machine learning and deep learning algorithms in functional magnetic resonance imaging—A systematic review, Expert Systems (SCI indexed)

4. Bansal, N., Goyal, V., & Rani, S. (2020). Experimenting Language Identification for Sentiment Analysis of English Punjabi Code Mixed Social Media Text. International Journal of E-Adoption (IJEA), 12(1), 52-62.

5. Goyal, V., Kumar, A., & Lehal, M. S. (2020). Document Alignment for Generation of English-Punjabi Comparable Corpora from Wikipedia. International Journal of E-Adoption (IJEA), 12(1), 42-51.

6. A. Mulu, V. Goyal, "Amharic Phrase Chunking with Conditional Random Fields," Journal of Scientific Research, Vol. 64, No. 1, pp.153-159, Jan. 2020.

7. Kapil Dev Goyal, Vishal Goyal, "Extraction of Named Entities from Punjabi-English Parallel Corpora",Xi'an University of Architecture and Technology, Vol XII, Issue IX, 2020.

8. Singh, M., Goyal, V., & Raj, S. (2020, June). Sentiment Analysis of Code Mixed Text Consisting of English-English Punjabi Lexicon. An International Journal of Engineering Sciences, Vol. 33 (pp. 15-23).

9. Singh, M., Goyal, V., & Raj, S. (2019, November). Sentiment Analysis of English-Punjabi Code Mixed Social Media Content for Agriculture Domain. In 2019 4th International Conference on Information Systems and Computer Networks (ISCON) (pp. 352-357). IEEE.

10. Singh, M., Goyal, V., & Raj, S. Sentiment Analysis of English-Punjabi Code-Mixed Social Media Content to Predict Elections. In Advances in Information Communication Technology and Computing (pp. 81- 90). Springer, Singapore.

11. Lehal, M. S., Kumar, A., & Goyal, V. (2019). Comparative Analysis of Similarity Measures for Extraction of Parallel Data. International Journal of Control and Automation, 12(6), 408-417.

12. Mamoon Rashid, Harjeet Singh, Vishal Goyal, Kulvinder Singh, Neeraj Mogla, "Role and Impact of Big Data Analytics in Health Care Systems", CSI Journal of Computing, pp. 34-36, May 2019 (E-ISSN: 22777091).

13. Mamoon Rashid, Harjeet Singh, Vishal Goyal" Cloud Storage Privacy in E-Health Care Systems based on IP and Geo-Location Validation using K-Mean Clustering Technique", International Journal of E-Health and Medical Communications, ESCI, Scopus, WOS, 2018, In Press, Volume 11, Issue 1, Article 3, April 2019, SJR: 0.13 (ISSN: 1947-315X)

14. Surjya Kanta Daimary , Vishal Goyal, Madhumita Barbora , Umrinderpal Singh, Development of Part of Speech Tagger for Assamese Using HMM, International Journal of Synthetic Emotions, Volume 9, Issue 1, January-June 2018, pp.23-32

15. Shishpal Jindal, Vishal Goyal, Jaskarn Singh Bhullar (2018) English to Punjabi statistical machine translation using moses (Corpus Based), Journal of Statistics and Management Systems, 21:4, 553-560, DOI: 10.1080/09720510.2018.1471265

16. Lalit Goyal, Vishal Goyal, Text to Sign Language Translation System: A Review of Literature, International Journal of Synthetic Emotions, Volume 7, Issue 2, July-December 2016, pp.64-79 (Published in 2018).

17. Ajit Kumar, Vishal Goyal (2018) Hindi to Punjabi machine translation system based on statistical approach, Journal of Statistics and Management Systems, 21:4, 547-552, DOI: 10.1080/09720510.2018.1466963

18. Kamal Deep, Ajit Kumar, Vishal Goyal, Development of Punjabi-English (PunEng) Parallel Corpus for Machine Translation System, International Journal of Engineering & Technology,7(2),2018,pp.690-693

19. Yohannes Dagnachew, Vishal Goyal, Plagiarism Detection Tool for Amharic Text, International Journal of Multidisciplinary Educational Research, pp.191-204, ISSN:22777881, Vol 6, Issue 7(1), July 2017.

20. Melaku Kore, Vishal Goyal, Machine Transliteration for English to Amharic Proper Nouns, International Journal of Computer Science Trends and Technology (IJCST), Volume 5, Issue 4, Jul-Aug 2017, pp.23-31, ISSN: 2347-8578, http://www.ijcstjournal.org/volume-5/issue-4/IJCST-V5I4P5.pdf

21. Lalit Goyal, Vishal Goyal, Design and Implementation of ISL Grammar, Presented during 104th Indian Science Congress, Published as Abstract in Proceedings.

22. Parneet Kaur Mann, Vishal Goyal, Kirtida Shah, Gujrati POS Tagger, Lecture Notes on Data Engineering and Communications Technologies(In the process of Publishing), Presented at ICRACCCS-2016, Organized by JRN Vidyapeeth Deemed University, Udaipur.

23. Surjya Diamary, Vishal Goyal, Madhumita, Assamese POS Tagger, Accepted for Presentation in MICTAS -17 Conference during July 28-29 2017, in Toronto,Canada.

24. Lalit Goyal, Vishal Goyal, Automatic Translation of English Text to Indian Sign Language Synthetic Animations, Presented during ICON 2016, Published in ACL Anthology.

25. Lalit Goyal, Vishal Goyal, Development of Indian Sign Language Dictionary using Synthetic Animations, Indian Journal of Science and Technology,Vol9, Issue 32, 2016, pp.1-5.

26. Umarinder Pal Singh, Vishal Goyal, Gurpreet Singh Lehal, Urdu to Punjabi Machine Translation: An Incremental Training Approach, IJASCA, Vol7, No. 4, 2016, pp 227-238, SCI Indexed.

27. Lalit Goyal, Vishal Goyal, "Text to Sign Language Translation System: A Review of Literature", International Journal of Synthetic Emotions (IJSE), Volume-7, Issue-2, 2016, pp-62-77.

28. Goyal V., Garg S., Singh U. (2016) System for Generating Questions Automatically from Given Punjabi Text. In: Vetulani Z., Uszkoreit H., Kubis M. (eds) Human Language Technology. Challenges for Computer Science and Linguistics. LTC 2013. Lecture Notes in Computer Science, vol 9561. Springer, Cham ISSN:978-3-319-43807-8, 978-3-319-43808-5

29. Urvashi Garg , Vishal Goyal, Maulik: a Plagiarism Detection Tool for Hindi Documents, Indian Journal of Science and Technology, Volume 9, Issue 35, March 2016, pp. 1-10.

30. Rupinder Pal Kaur, Vishal Goyal, Qualitative Performance Analysis of Punjabi and Hindi Websites of Academic Domain: A Case Study, Information Systems Design and Intelligent Applications, Volume 435 of the series Advances in Intelligent Systems and Computing pp.635-644 (As Book Chapter)

31. Chandan Mittal , Vishal Goyal , Umrinderpal Singh, HMM Chunker for Punjabi, Indian Journal of Science and Technology, Volume 8, Issue 35, December 2015, pp. 1-5.

32. Ajit Kumar, Vishal Goyal, Statistical Post Editing System (SPES) Applied to Hindi-Punjabi PB-SMT System, Indian Journal of Science and Technology, Volume 8, Issue 27, October 2015, pp. 1-5.

33. Rajeev Puri, R.P.S. Bedi, Vishal Goyal, Punjabi Stemmer Using Punjabi WordNet Database, Indian Journal of Science and Technology, Volume 8, Issue 27, October 2015, pp. 1-5.

34. Rupinder Sandhu, Vishal Goyal, Kunwar Nain Singh Sandhu, Automating the quality of websites of Punjabi and Hindi newspapers: A case study, IEEE Xplore, (CCIP) 2015, DOI: 10.1109/CCIP.2015.7100715

35. Mahamed Daud , Vishal Goyal, Predictive Text Entry Method for Somali Language on Mobile Phone, International Journal of Computer Science Trends and Technology (IJCST) – Volume 3 Issue 3, May-June 2015, pp. 274-280.

36. Alemebante Mulu , Vishal Goyal, Amharic Text Predict System for Mobile Phone, International Journal of Computer Science Trends and Technology (IJCST) – Volume 3 Issue 3, May-June 2015, pp. 113-118.

37. UmrinderPal Singh, Vishal Goyal, Anisha Rani, Disambiguating Hindi Words Using N-Gram Smoothing Models, International journal of Engineering Sciences, Issue June 2014,pp.26-29

38. Manish Kumar, Vishal Goyal, Jaskaran Bhullar, Development of domain based Hindi to Punjabi Machine Translation System - Scope and Challenges, 2013, International journal of Engineering Sciences , Vol9, pp. 49-58.

39. Rakesh Kumar, Vishal Goyal, Ravinder Khanna, N-gram Based Word Sense Disambiguation of Hindi Post Position से (sē) in the context of Hindi to Punjabi Machine Translation System, 2013, International Journal of Engineering Sciences, Vol9, pp. 59-67.

40. Harjeet Singh, Ravinder Khanna, Vishal Goyal, Machine Translation system for Standard Punjabi to Malwai Dialect, 2013, International Journal of Engineering Sciences, Vol9, pp. 68-73.

41. Vishal Goyal, Umarinder Pal Singh, Font Identifier and Unicode Converter for Hindi, Napalese Journal of Linguistics, Linguistics Society of Nepal, Kathmandu Vol28, pp. 225-229,ISSN 0259-1006,November 2013.

42. Rupinder Pal Kaur,Vishal Goyal," Empirically Validating a Web Quality Model for Academic Websites Developed in Punjabi and Hindi: A Case Study" International Conference on Innovations in Engineering and Technology, International Institute of Engineers (IEE), Bangkok,Thailand December 25-26,2013. ISBN No. 978-93-82242-60-4.

43. Rupinder Pal Kaur, Vishal Goyal, Gagandeep Kaur, Web Quality Model for Websites Developed in Punjabi and Hindi , The International Journal of Soft Computing and Software Engineering [JSCSE], 2013, Vol. 3, No. 3, pp.557-563.

44. Deepali, Vishal Goyal, Ankur Rana, "Opinion Polarity Detection-A Survey",IJCLNLP, September2012, Vol1(1),pp.20-26,ISSN: 2279 – 0756.

45. Rajeev Puri, R.P.S. Bedi, Vishal Goyal, Automated Stopwords Identification in Punjabi Documents, 2012, International Journal of Engineering Sciences, Vol6, pp. 119-125.

46. Anjana Kumari, Vishal Goyal, "Font Convertors for Indian Languages – A Survey", IJAR, September 2012, Vol. 1, pp. 41-42, ISSN: 2249-555X.

47. Navneet Garg, Vishal Goyal, "Part of Speech Tagger for Hindi And Punjabi: A survey",IJAETR, July-Aug 2012, Vol.1(2),pp.40-43,ISSN. 2278-7070(Online).

48. Umarinder Pal Singh, Vishal Goyal, "Survey of Named Entity Recognition System for Urdu", IJAETR, July-Aug 2012, Vol.1(2),pp.52-56,ISSN. 2278-7070(Online).

49. Rajeev Puri, R.P.S. Bedi, Vishal Goyal, Plagiarism Detection in Regional Languages – Its challenges in context to Punjabi documents, International Journal of Engineering Sciences, Vol. 5, pp.296-304.

50. Rohit Kansal, Vishal Goyal, "Survey of Stemming In Context of Urdu", IJAETR, July-Aug 2012, Vol.1(2),pp.48-51,ISSN. 2278-7070(Online).

51. Rakesh Kumar, Vishal Goyal, Ravinder Khanna,,A Review of Literature on Word Sense Disambiguation, 2011, International Journal of Engineering Sciences, Vol6, pp. 224-230.

52. Gurvir Kaur, Vishal Goyal, "Translating Hindi OOV (Out of Vocabulary) Hindi inflected words in Rule based Hindi to Punjabi Machine Translation System", IJCIS, 3(3), Issue September 2011, pp.59-75.ISSN:2229-5208

53. Monika Sharma, Vishal Goyal, "Extracting Hindi Proverbs in Machine Translation from Hindi to Punjabi using Relational Data Approach", IJCSC July-December 2011 Issue, Vol. 2(2):611-613. ISSN: 0973-7391

54. Kamaldeep, Vishal Goyal, "Hybrid Approach for Punjabi to English Transliteration System", International Journal of Computer Applications 28(1):1-6,August 2011, ISSN:0975-8887.

55. Kamaldeep, Vishal Goyal, "Development of Punjabi to English transliteration System", International Journal of Computer Science and Communications, 2011 2(1):521-526 ISSN:0973-7391.

56. Rajesh Sharma, Vishal Goyal, "Named Entity Recognition Systems for Hindi using CRF Approach", In the Proceedings International Conference for Information Systems for Indian Languages, Patiala, Department of Computer Science, Punjabi University, Patiala, March 9-11, 2011, pp. 31-35, Springer CCIS 139, Germany (2011)

57. Ankur Rana, Vishal Goyal, Vimal K. Soni, "Renaissance of Opinion Mining", In the Proceedings International Conference for Information Systems for Indian Languages, Patiala, Department of Computer Science, Punjabi University, Patiala, March 9-11, 2011, pp. 60-67, Springer CCIS 139, Germany (2011)

58. Karuna Jindal, Vishal Goyal, Shikha Jindal, "Automatic Word Aligning Algorithm for Hindi-Punjabi Parallel Text", In the Proceedings International Conference for Information Systems for Indian Languages, Patiala, Department of Computer Science, Punjabi University, Patiala, March 9-11, 2011, pp. 180-185, Springer CCIS 139, Germany (2011)

59. Vishal Goyal, Gurpreet Singh Lehal, "Hindi to Punjabi Machine Translation System", In the Proceedings International Conference for Information Systems for Indian Languages, Patiala, Department of Computer Science, Punjabi University, Patiala, March 9-11, 2011, pp. 236-241, Springer CCIS 139, Germany (2011)

60. Ajit Kumar, Vishal Goyal, "Comparative Analysis of Tools Available for Developing Statistical Approach Based Machine Translation System", In the Proceedings International Conference for Information Systems for Indian Languages, Patiala, Department of Computer Science, Punjabi University, Patiala, March 9-11, 2011, pp. 254-260, Springer CCIS 139, Germany (2011)

61. Ajit Kumar, Vishal Goyal, "TDIL programme: A Government Initiative", International Journal of Engineering Sciences, Journal Inaugural Issue, 2010, pp. 1-8.

62. Pardeep Kumar, Vishal Goyal, "Development of Hindi-Punjabi Parallel Corpus using existing Hindi-Punjabi Machine Translation System", In the Proceedings IITM '10 Proceedings of the First International Conference on Intelligent Interactive Technologies and Multimedia. Published in ACM, New York, NY, USA, DOI: 1-58113-000-000/0010, ISBN: 978-1-4503-0408-5, pp-114-118.

63. Brahmleen Kaur Sidhu, Arjan Singh, Vishal Goyal, "Identification of proverbs in Hindi Text Corpus and their translation in Punjabi", JCSE, July 2010, Vol 2(1), pp. 32-37, ISSN:2043-9091 (Online).

64. Vishal Goyal, Gurpreet Singh Lehal, "Automatic Spelling Standardization for Hindi Text", In the Proceedings International Conference on Computer & Communication Technology, Allahabad, Moti Lal Nehru National Institute of

technology, Allahabad, September 17-19, 2010, pp. 764-767, IEEE Computer Society Press, California, USA (2010)

65. V. Goyal and G. S. Lehal, " Hindi Morphological Analyzer and Generator, ICETET Proceedings of the 2008 IEEE International Conference on Emerging Trends in Engineering and Technology. IEEE Computer Society Press, Washington, DC, USA (2008), pp1156-1159.

66. Vishal Goyal, Gurpreet Singh Lehal, "N-Grams Based Word Sense Disambiguation: A Case Study of Hindi to Punjabi Machine Translation System", International Journal of Translation, Vol 23, No.1, Jan-Jun 2011, pp. 99-113. ISSN: 0970-9819.

67. Karuna Jindal, Vishal Goyal, "Improved Algorithm for Automatic Word Alignment for Hindi-Punjabi parallel corpus", Proceedings of International Conference on Data Engineering and Management (ICDEM 2010), July 29-31, India. Published in Lecture Notes in Computer Science (LNCS Volume 6411), Springer Verlag, Heidelberg-Germany.

68. Rajesh Sharma, Vishal Goyal, "Survey of Name recognition Systems for different languages", PCTE Journal of Computer Sciences, Vol. 6(2),July-December 2009, pp.32-45.

69. Karuna Jindal, Vishal Goyal, "Development of Improved Algorithm for automatic word alignment for Hindi-Punjabi Parallel Corpus", PCTE Journal of Computer Sciences, Vol. 6(2),July-December 2009, pp.150-156.

70. Vishal Goyal, G S Lehal, "Advances in Machine Translation Systems", Language In India, Volume 9, November 2009 Issue, pp. 138-150(2009)

71. Vishal Goyal, G.S.Lehal, "Web Based Hindi to Punjabi Machine Translation System", May 2010 Issue, JETWI.

72. Vishal Goyal, G.S.Lehal, "Evaluation of Hindi to Punjabi Machine Translation System", IJCSI International Journal of Computer Science Issues, Vol. 4, No. 1, 2009, p.p 36-39.

73. Priyanka Gupta, Vishal Goyal, "Implementation of Rule Based Algorithm for Sandhi-Vicheda Of Compound Hindi Words" IJCSI, Volume 3, August 2009,p.p 45-49.

74. Vishal Goyal, Lakhbir Singh, "A Hybrid Word Alignment Approach for Hindi-Punjabi Parallel Text", PCTE Journal of Computer Sciences, January-June 2009,Vol 6 Issue 1

75. V Goyal and G S Lehal, "A Machine Transliteration System for Machine Translation System : An Application on Hindi-Punjabi Language Pair", Atti Della Fondazione Giorgio Ronchi (Italy) (2009), Volume LXIV, No. 1, pp. 27-35 (2009)

76. Vishal Goyal, Gurpreet Singh Lehal, "Comparative Study of Hindi and Punjabi Language Scripts", p.p 67-82, Napalese Linguistics, Journal of the Linguistics Society of Nepal, Volume 23, November, 2008, ISSN 0259-1006

77. Vishal Goyal, Gurdarshan Singh, "Algorithm for Automatic alignment of sentences in Hindi Punjabi parallel Corpus", Journal of Computer Science, Coimbatore, 2005.

**Papers Presented at International Conferences:**

1. Singh, M., Goyal, V., & Raj, S. (2019, November). Sentiment Analysis of English-Punjabi Code Mixed Social Media Content for Agriculture Domain. In

2019 4th International Conference on Information Systems and Computer Networks (ISCON) (pp. 352-357). IEEE.

2. Mamoon Rashid, Mir Mohammad Yousuf, Balwant Ram, Vishal Goyal, "Novel Big Data Approach for Drug Prediction in Health Care Systems", International Conference on Automation, Computational and Technology Management (ICACTM-2019), IEEE Conference, United Kingdom and Ireland Section, Record number: #45379, Scopus, In Press , March 2019. Paper ID: 185.

3. Lalit Goyal, Vishal Goyal, "Automatic Translation of English Text to Indian Sign Language Synthetic Animations", in 13th International Conference on Natural Language Processing (ICON 2016) held on December 17-20, 2016 organized by Indian Institute of Technology (Banaras Hindu University), India.

4. Lalit Goyal, Vishal Goyal, "Grammar Rules for automatic conversion of English to Indian Sign Language", in 104th Indian Science Congress held on January 3-7, 2017 at Sri Venkateswara University, Tirupati, India.

5. Vishal Goyal, "HMM Chunker for Punjabi", Third Regional Conference on Natural Language Processing, regICON 2015, September 18-19,2015.

6. Shikha Garg, Vishal Goyal, Automatic Question Answer Generation System, LTC 2013, Poland (In process of publication in Springer Journal).

7. Anu Sharma, Vishal Goyal, Opining Mining for Punjabi, LTC 2013, Poland.

8. Ajit Kumar, Vishal Goyal, "Practical Approach for developing Hindi-Punjabi Parallel Corpus", In Proceedings of LREC 2012 Istanbul, pp. 65-69. (Indexed in Conference Proceedings in Thomson Reuters)

9. Vishal Goyal, Rajesh Mahajan, The Impact of  Globalization on Child Labour, International Conference on Human Rights in the age of globalization, India, Nov. 19-21, 2005,183

10. Vikram Singh, Vishal Goyal, Sapna Mehta, "Aspects of Information Security – A Multi Layered Approach, Challenges in Networking and Future of e-Commerce", India, April 09-10,2005,144-151

11. Vikram Singh, Vishal Goyal, Sapna Mehta, "Mining E-Commerce Data, Challenges in Networking and Future of e-Commerce", India, April 09-10,2005,286-293.

12. Vishal Goyal, Vinay Chopra, Rajesh Mahajan, "Effective Factors for retaining talent in IT and ITes Sector – A Survey", International Conference on Services Management, India, March 11-12, 2005, 544-554

13. Vishal Goyal, Kamaljit Kaur, Vikram Sharma, "Segmentation of Hindi Character Recognition System", ICCII -2005, India, Nov. 12,2005,94-96

14. Vishal Goyal, G.S.Lehal, "Hindi to Punjabi Machine translation System using Direct Approach" , International Conference on Trends in Information Sciences

and Computing, organized by SATHYABAMA UNIVERSITY Jeppiaar Nagar, Chennai -119

15. Priyanka Gupta, Rajni Bansal, Vishal Goyal, Fully Automatic General Purpose High Quality Machine Translation System (FGH-MT) – Is it a reality?, ICACCT 2007, APIIT, Panipat.

16. Charankanwal Singh Sodhi, Vishal Goyal, Shalu Jindal, "The Role of ICT in Distance Learning", ICACCT 2007, APIIT, Panipat.

17. Vishal Goyal, Gurpreet Singh Lehal, " Hindi Morphological Analyzer and generator", ICETET-08, G.H.Raisoni College of Engineering, Nagpur, INDIA, 16-19th July, 2008.

18. Lakhbir Singh Garcha, Vishal Goyal, "Automatic Aligning of Hindi Punjabi Parallel Corpus at Word Level", IACC-09, Thapar University, Patiala, 6-7 March 2009.

19. Lakhbir Singh Garcha, Vishal Goyal, "A Hybrid Word Alignment Approach for Hindi-Punjabi Parallel Text", DCIT-09, PCTE, Ludhiana,22nd May 2009.

**Papers Presented at National Conferences:**

1. Lalit Goyal, Vishal Goyal, "Text to Sign Language-A Review of Literature", in 2-days National Conference on Recent Trends and Technologies in Data Science & Artificial Intelligence (NCTDA-2016) held on August 26-27, 2016 organized by Department of Computer Science & IT, Bhaderwah Campus, University of Jammu.

2. Vishal Goyal, Vinay Chopra, Mukesh Dhingra, Open Source Operating System for Embedded Systems, U.G.C. Sponsored National Seminar on Embedded Systems, India, Jan 24-25, 2005, 24-29

3. Vikram Singh, Vishal Goyal, P.K.Suri, E-Governance Framework in Haryana, RAFIT 2005, India, March 2-3,2005, 210

4. Vikram Singh,Vishal Goyal,Sapna Mehta, Impact of Internet on Business, RAFIT 2005, India, March 2-3,2005,215

5. Vikram Singh,Vishal Goyal,Rasheed Khan, Misconceptions about E-Governance in India, RAFIT 2005, India, March 2-3,2005,219

6. Vishal Goyal, Dheeraj Jain, DNA Computing – An Emerging Trend, UGC Sponsored National Seminar on Recent Technologies in IT, India, 29 Sept.,2005, 86

7. Vishal Goyal **(Young Scientist Award Winner),** Computing $X^n$ using DNA Strands, 8th Punjab Science Congress, India, February 7-9,2005, 139

8. Vishal Goyal, Challenges and Future to online Education, E-Contents on EDUSAT, India, February 4-5 ,2005, Proceedings on CD

9. Vishal Goyal, KM Approach to E-Governance, Knowledge Management, India, Dec. 4-5 2004, ,95

10. Vishal Goyal, Ravinder Jindal, Ritu Gupta, Challenges to Online Education, Quest for Excellence in HE, India, November 20,2004,93-107

11. Vishal Goyal, Vinay Chopra, Sunil Khullar, Application of Quantum Computing in Wireless Ad Hoc Networks, Issues and Trends in Wireless Networks , India, Dec. 17-18, 2004,48

12. Vishal Goyal, Expert System, Communication and Embedded Systems, India, March 12,2004, 108

13. Vishal Goyal, Machines, Logic And  Quantum Physics, Communication and Embedded Systems , India, March 12,2004, 210

14. Vishal Goyal, Mamta Verma, Impact of ICT on Education, IT: Pathway for Transformation of Society, India, March 13-14,2004, 461

15. Vishal Goyal, Sumit Kaushik, LPC: A Speech coding method based on human speech production, Modern Trends in Information and Communication Technology, India, Oct. 20-22,2005,156

16. Gurdarshan Singh, Vishal Goyal, Gurpreet Singh Josan, Survey of various sentence alignment algorithms for Parallel Copora, RAFIT 2007,Department of Computer Science, Punjabi University, Patiala

17. Vishal Goyal, Dolly Watta, Standarizing Hindi Text, IEEE National Conference on Application of Intelligent Systems, (AIS-2008), Hindu College of Engineering, Sonepat.

18. Vishal Goyal, Archana Garg, Narinder Kumar, Word Sense Disambiguation, Futuristic Trends in Engineering and Technology organized by Jan Nayak Ch. Devi Lal Memorial College of Engineering, Sirsa.

19. Aarti Rana, Vishal Goyal, Relative Study of Software Cost Estimating Methods, 11th Punjab Science Congress organized by Thapar University, Patiala.

20. Vishal Goyal, "Survey of various sentence alignment algorithms for Parallel Corpora" , Souvenir M.M.Modi College, Patiala.

21. Priyanka Gupta, Vishal Goyal ,"Survey of various POS Taggers: A case study of Hindi language" RAFIT 2009, Punjabi University, Patiala, 9-10 April,2009.

22. Sukhpal Kaur, Vishal Goyal, "Survey of various Unsupervised Algorithms for automatic generation of Hindi Corpus", RAFIT 2009, Punjabi University, Patiala, 9-10 April,2009.

**Articles Published (3):**
1. "Modern tech meets Indian Sign language",Multilingual, May-June 2020 Issue. https://magazine.multilingual.com/issue/may-june-2020fl/
2. "Essentials for On Campus Placements", Competition Affairs National Level Magazine, April 2008 issue.
3. "How to excel in taking job", Competition Affairs National Level Magazine, October 2008 issue.

4. "Motivation: Your gateway to success", Competition Affairs National Level Magazine, November 2008 issue.