Dr. SIKANDER SINGH CHEEMA

Assistant Professor,
Department of Computer Science & Engineering,

Co-coordinator,
Staff Training and Development Cell,

Nodal Officer Persons with Disabilities Cell,
Punjabi University, Patiala, Punjab.

Elected Executive member
PUTA from 2018-19 and 2019-20 (Punjabi University Teachers Association)

Sikander Singh Cheema is presently working as Assistant Professor, Department of Computer Science and Engineering at Punjabi University, Patiala, Punjab (India) under Physically Handicapped category. He is B.Tech., M.E. and Ph.D. in Computer Science and Engineering. He has more than 10 years of teaching experience and more than 3 years of Industry.

He has published around 24 Research Papers in the Reputed International Journal and 07 Research Papers in Conferences. Around 20 students have completed their M.Tech thesis. He is a Technical Reviewer of many-reputed journals.

EDUCATION

- Ph.D. in Computer Science & Engineering, March 2021.
  Punjabi University, Patiala, India.
- M.E. in Computer Science & Engineering, July 2008
  PEC Chandigarh, Chandigarh, India.
- B.Tech in Computer Science & Engineering, June 2004
  GZSCET Bathinda, Punjab, India.

DISSERTATION

Doctorate of Philosophy (Ph.D.)
Title: "Knowledge Based System for Diversification of Crops Using Evolutionary Approach"
Advisor: Dr. Amardeep Singh, Professor, Punjabi University, Patiala, Punjab, India.

Mater of Engineering (M.E.)
Title: "Scalable Energy Efficient Ad-Hoc on Demand Distance Vector (SEE-AODV) Routing Protocol in Wireless Mesh Networks"
Advisor: Dr. Trilok Chand, PEC Chandigarh, Punjab, India.

INDUSTRY EXPERIENCE

September 2008 to November 2011, Senior System Engineer, INFOSYS, Chandigarh.

TEACHING EXPERIENCE

August 2004 to August 2006 Lecturer, Bhai Maha Singh College of Engineering, Muktsar, Punjab, India.

November 2011 to March 2012 Assistant Professor, Punjab Agriculture University (PAU), Ludhiana, Punjab, India.

March 2012 to till date Assistant Professor, Punjabi University, Patiala.

AREA OF RESEARCH

Artificial Intelligence and Data Science.

IMPORTANT ADMINISTRATIVE RESPONSIBILITIES

- Coordinator, Centre for Artificial, Intelligence and Data Sciences, Interdisciplinary Research Centers under RUSA-2 scheme from 27-07-23 to till date.
- Convenor, One Day Annual National Seminar-2022 on "Role of Artificial Intelligence and Automation in Modern Age Agriculture"
- Convenor, Annual Techfest of Engineering Departments - CRISPOLATIEIA-2022
- Co-ordinator, M.Tech (Part-Time) from 20-5-2021 to till date.
- Co-coordinator, Staff Training and Development Cell, Punjabi University, Patiala from June 2018 to till date.
- Nodal Officer, PWD Cell, Punjabi University, Patiala from February 2020 to till date.
- Executive member, PUTA (Punjabi University Teachers Association) 2018-19
- Executive member, PUTA (Punjabi University Teachers Association) 2019-20.
- Warden, Homi Bhaba Hostel (Boys) from June 2012 to August 2015**.**
- Warden, Bhagat Puran Singh Hostel (Boys) from June 2013 to October 2017.
- Examination Superintendent, 2018-19 session.
- Secretary, ACD during session 2018-19
- Coordinator, Annual Techfest of Engineering Departments - CRISPOLATIEIA-2018.
- Convenor, B.Tech and M.Tech Fresher Party-2017.
- Convenor, Annual Techfest of Engineering Departments - CRISPOLATIEIA-2016.
- Convener, M.Tech Farewell Party-2016.
- Coordinator, Departmental Placement Committee from September 2015 to December 2016.
- Worked as a In charge (Computer Operation) for admission purpose in University Centralized Admission Cell in 2016.
- Convenor, M.Tech Fresher Party-2015.
- Member of Transport Committee in Conference organised by Centre for South West Asia Study in 2015.

- Member of NAAC Committee on "Criterion V: Student Support and Progression" from 2014-15.
- Member of Inter Regional Lok Mela in 2015.
- Coordinator, Annual Techfest of Engineering Departments - CRISPOLATIEIA-2015.
- Member, Organising Committee of Annual Techfest of Engineering Departments-Crispolatieia 2013.

ORIENTATION/REFRESHER COURSES

- Attended Orientation Course (4 Weeks) from 12-05-2015 to 08-06-2015 at UGC-HRDC, Punjabi University, Patiala, Punjab.

- Attended Refresher Course (3 weeks) from 23-05-2016 to 11-06-2016 at UGC-HRDC, Punjabi University, Patiala, Punjab.

- Attended Refresher Course from 10-8-2020 to 24-08-2020 at UGC-HRDC, Punjabi University, Patiala, Punjab.

- Attended a Short Term Course on "e-Content Development and on-line Pedagogy from 1st Aug 2022 to 8th Aug 2022 at UGC-HRDC Punjabi University Patiala.

- Attended Refresher Course from 9th Jan 2023 to 21st Jan 2023 at UGC-HRDC, Punjabi University, Patiala, Punjab.

PROFESSIONAL DEVELOPMENT ACTIVITIES

- Participated in one day workshop on "CYBER CRIME" in the Punjab School of Law, Punjabi University Patiala on 23-02-2017.
- Participated in two day Regional Workshop on "INDIAN WOMEN AND MATHEMATICS: Research and Career Opportunities "organized by Department of Mathematics, Punjabi University, Patiala from 06-02-2017 to 07-02-2017.
- Attended two days' workshop organised by Department of Computer Engineering on " Latest Trends in Cloud Computing" from 11-04-2016 to 12-04-2016.
- Participated in one day Seminar on " Fullbright-Nehru Fellowship Opportunities for Research and Professional Development in USA" at Punjabi University, Patiala on 05-04-2016.
- Participated in 1.5 days tutorial on "Introduction to mobile System and Wireless Sensor Networks" organised by IIT, Ropar from 05-06-2014 to 06-06-2014.
- Delivered Lecture on "Cyber Crime" in Department of Physical Education, Punjabi University.
- Participated in One Week National Workshop on Digital Image Processing using MATLAB, organized by Department of Computer Science, Punjabi University from 6th Nov 2012 to 5th Dec 2012.
- Delivered Lecture on "Cyber Crime" in Department of Physical Education, Punjabi University.
- Delivered Guest Lecture on "Simulation and Modeling" in Gurukul Vidyapeeth Institute of Engg. & tech, Banoor, Punjab.
- Delivered Expert Lecture on "Advanced Concepts of OOP" in Baba Farid College of Engg. & Technology, Bathinda, Punjab.

EXTRA CO-CURRICULAR ACTIVITIES (Sports)

1. Participated and secured positions in the following events of FACULTY MEET 2013-14 held at Punjabi University, Patiala.

Events	Medal
Shot Put	Gold
Long Jump	Gold
Javelin Throw	Participation

2. Participated and secured positions in the following events of FACULTY MEET 2014-15 held at Punjabi University, Patiala.

Events	Medal
Shot Put	Gold
Javelin Throw	Gold
Discus Throw	Silver
Long Jump	Gold

I was declared as **Best Athlete** in this Faculty Meet (under 40 weight category).

3. Participated and secured positions in the following events of FACULTY MEET 2021-22 held at Punjabi University, Patiala.

Events	Medal
Shot Put	Gold
Javelin Throw	Gold
100m Race	Bronze
400m Race	Bronze
Tug-of-War	Gold

4. Participated in National Para Badmintion Championship 2022-23 held from 23rd to 26th March 2023 at Dr Shakuntala Misra National Rehabilition University Lucknow Uttar Pradesh.

JOURNAL PAPERS

1. Er. Amandeep Kaur Mangat and Er. Sikander Singh, "Enhancement of AES Algorithm Using Lossless Compression Technique", *IJRIT International Journal of Research in Information Technology*, ISSN 2001-5569, Volume 2, Issue 10, October 2014, Pg. 252-257.
2. Er. Rozy and Er**.** Sikander Singh, "Comprehensive Analysis of MANET Routing Protocols with Mobility and Scalability for FTP Delay Traffic Using OPNET

Modeler", *International Journal In Applied Studies And Production Management*, ISSN 2394-840X , Volume1,Issue 2, 2015.

3. Er. Sukhjot Kaur and Sikander Singh," Effect of jelly fish attack on TORA AND GRP protocols (hybrid routing protocols) in MANET", *International Journal In Applied Studies And Production Management*, ISSN 2394-840X , Volume1, Issue 2, 2015.

4. Amandeep Singh and Sikander Singh, "Survey of Location Aided Routing Protocol for Wireless Sensor Network", *International Journal of Advanced Research in Computer Science and Software Engineering*, ISSN: 2277 128X, Volume 5, Issue 5, 2016.

5. Mandeep Singh and Sikander Singh**, "**Review of Task Scheduling in Cloud Computing Environment", *International Journal of Engineering and Management Research*, ISSN (ONLINE): 2250-0758, ISSN (PRINT): 2394-6962, Volume-5, Issue-3, June 2015, pp. 721-725.

6. Bhupinder Singh and Sikander Singh, "Black Hole Attack in Mobile ad hoc Networks: A Survey", *IJESC*, ISSN2321 3361, 2015.

7. Bhupinder Singh and Sikander Singh, "Preventing Black Hole Attack in Mobile Ad Hoc Networks using Secure Clustering", *IJESC*, ISSN2321 3361, 2015.

8. Simranjot Kaur and Sikander Singh Cheema, "Review Paper on Big Data: Applications and Different Tools", *International Journal of Advanced Research in Computer and Communication Engineering*, ISSN: 2319-5940 (print), 2278-1021 (online) Vol. 6, Issue 6, June 2017, pp-526-528.

9. Simranjot Kaur and Sikander Singh Cheema, "BIG DATA AND ANALYSIS OF WEATHER FORECASTING SYSTEM", *International Journal of Advanced Research in Computer Science*, ISSN No. 0976-5697, Volume 8, No. 7, July – August 2017, pp-176-179.

10. Parmeet Kaur and Er. Sikander Singh Cheema, "CROP SIMULATION MODEL FOR MALWA REGION PUNJAB, *International Journal of Advanced Research in Computer Science*, ISSN No. 0976-5697, Volume 8, No. 7, July – August 2017, pp"172-175

11. Parmeet Kaur and Er. Sikander Singh Cheema, "Implementation of Crop Simulation Model for Malwa Region Punjab", *International Journal of Advanced Research in Computer and Communication Engineering*, ISSN (Online) 2278-1021, ISSN (Print) 2319 5940, ISO 3297:2007, Vol. 6, Issue 6, June 2017, pp:529-532.

12. Radhika Sethi and Sikander Singh Cheema, "Clustering Based Crop Diversification Model Using K-Means Algorithm in Indian Punjab Region", *International Journal of Engineering Research in Computer Science and Engineering*, ISSN (Online) 2394-2320, Vol 5, Issue 4, April 2018, Impact Factor: 4.890, pp-357-361.

13. Radhika Sethi and Sikander Singh Cheema, "Comparison of various clustering algorithm with proposed clustering algorithm" *International Journal of Engineering Research in Computer Science and Engineering*, ISSN (Online) 2394-2320 ,Vol. 5, Issue 7, July 2018, Impact Factor: 4.890, pp. 1-4.

14. Rimaldeep kaur and Sikander Singh Cheema,, "A Brief Review: Factors Affecting Crop Diversification in India", *International Journal of Scientific Research in Computer Science Applications and Management Studies*, ISSN 2319 – 1953, Volume 7, Issue 3, May 2018.Impact Factor: 0.654.

15. Rimaldeep Kaur and Sikander Singh Cheema, "The Role of Crop Diversification towards High-Value Crops in Punjab, *International Journal of Scientific Research in Computer Science Applications and Management Studies*, ISSN 2319 – 1953, Volume 7, Issue 3, May 2018, Impact Factor: 0.654.

16. Simranjeet Kaur and Sikander Singh Cheema," "Selective feature processing with k-Nearest Neighbor classification to predict credit card frauds", *International Journal of Advance Research, Ideas and Innovations in Technology*, ISSN:2454-132X, Volume 4, Issue 3, pp. 530-533, 2018, Impact Factor: 5.79

17. Sikander Singh Cheema and Amardeep Singh "Crop-Soil Data Management System Of Cropping Decision System", *International Journal of Scientific & Technology Research*, ISSN: 2277-8616, Vol. 8, Issue 12, pp. 2388-2392, 2019 (Indexing: Scopus)*Impact Factor*: 0.31

18. Ranbir Gagat and Sikander Singh, "Clustering Techniques of Data Mining- A Review", International Journal of Computer Science and Mobile Computing, ISSN 2320-088X, IJCSMC, Vol. 8, Issue 7, July 2019, pg.152-160, Impact Factor:6.199.

19. Pawanpreet and Sikander Singh Cheema, "A Review of different techniques to analyze the effect of various types of diseases for the prediction of agriculture produce", *Alochana Chakra Journal*, ISSN NO: 2231-3990, Volume IX, Issue V, May/2020, pp: 317-325. UGC-CARE approved, Impact Factor: 6.3

20. Pawanpreet and Sikander Singh Cheema, "Crop Prediction Using Hybrid approach with Analysis of Agriculture Data", *Dogo Rangsang Research Journal*, ISSN NO: 2347-7180, Vol. 10, Issue 7, No. 17, July, 2020, UGC-CARE approved, Impact Factor: 6.35

21. Shavi Rishi and Sikander Singh Cheema, "Prediction of cardiac patients using IOT software and Machine Learning Techniques", *International Journal of Scientific Research in Engineering and Management (IJSREM), ISSN No: 2582-3930,* Vol. 04, Issue 08, August -2020,pp-1-6, (Indexing: Scopus/UGC), Impact Factor: 4.106.

22. Amaan, Sikander Singh Cheema, "LICENSE PLATE RECOGNITION WITH DEEP LEARNING – A REVIEW OF TECHNOLOGIES", International Journal of Scientific Research in Engineering and Management (IJSREM), ISSN: 2582-3930, Vol. 04, Issue 10, Oct -2020, (Indexing: Scopus/UGC), Impact Factor: 4.106.

23. Amaan, Sikander Singh Cheema, "DETECTION AND RECOGNITION OF NUMBER PLATES ON VEHICLES USING MACHINE LEARNING", *International Journal of Scientific Research in Engineering and Management (IJSREM)*, ISSN: 2582-3930, Vol. 04, Issue 11, Nov-2020, (Indexing: Scopus/UGC), Impact Factor: 4.106.

24. Sikander Singh Cheema, Amardeep Singh, "SIMULATION MODEL FOR CROP DIVERSIFICATION IN INDIAN PUNJAB", International Journal of Advances in Computer Science and Cloud Computing, ISSN (p): 2321 –4058, ISSN (e): 2321 – 4392, Vol. 8, Issue- 1, May, 2020.

25. Sikander Singh Cheema Amardeep Singh, and Hasse`ne Gritli, "Optimal Crop Selection Using Gravitational Search Algorithm", Mathematical Problems in Engineering, Volume 2021, 19-April 2021, Article ID 5549992, 14 pages. (Indexing-SCI(e)) Impact Factor:1.009

26. Dr. Sikander Singh Cheema, Harsimrat Deo, "Abnormal Distribution Handling with k-Nearest Neighbour (KNN) for Financial Fraud Detection", *International Journal of Mathematics and Computing Techniques*, Volume 4, Issue 4, July 2021, **ISSN [Online] : 2455 – 7994,** Impact Factor 3.963.

27. Navneet Kaur, Lakhwinder Kaur, Sikander Singh Cheema, "An enhanced version of Harris Hawks Optimization by dimension learning-based hunting for Breast Cancer Detection", *Scientific Reports* **11**, ISSN 2045-2322 (online), Article number: 21933 (2021), 9-Nov 2021, (PubMed, PubMed Central, Scopus, IF-4.380).

28. Bhagwant Singh, Sikander Singh Cheema, "Network security attacks & Techniques to Secure the networks", *International Journal of Advanced Research in Innovative Discoveries in Engineering and Applications,* Vol.7, Issue 2,27 April 2022, pg.21-39 (Indexing: Google Scholar)

29. Bhagwant Singh, Sikander Singh Cheema, "Methods for Restricting Unwanted Access on the Networks Using Firewall", *International Journal of Advanced Research in Innovative Discoveries in Engineering and Applications,* Vol.7, Issue 2,27 April 2022, pg.40-47 (Indexing: Google Scholar)

CONFERENCE PAPERS

1. Amandeep and Sikander Singh Cheema, "Prediction the location of sensor node in mobile WSN", 2015 Annual IEEE India Conference (INDICON).

2. Arshveer Kaur and Sikander Singh Cheema, "A HYBRID MULTI-AGENT BASED PARTICLE SWARM OPTIMIZATION FOR TELEMEDICINE SYSTEM FOR NEUROLOGICAL DISEASE", IEEE International Conference on Recent Advances and Innovations in Engineering (ICRAIE-2016)" Organized by Department of Computer Engineering, Jaipur Engineering College, India, December 23-25, 2016.

3. Sikander Singh Cheema and Amardeep Singh, "Study and Analysis of Various Crop Simulation Models", International Conference on New Trends in Engineering & Technology- (ICNTET-2018), Catelog CJP18P34-PRJ:978-1-5386-5629-7, 7-8 September, 2018, GRJ Institute of Engineering & Technology, Tiruttani, Chennai, Tamil Nadu, India.

4. Sikander Singh Cheema and Amardeep Singh Dhiman, "Analysis of Soil Management Data Module of DSSAT and Implementation for Indian Punjab", International Conference on Intelligent Machines (ICIM'19), 15-16 March, 2019, Baba Farid College of Engineering & Technology, Bathinda, Punjab, India.

5. Shavi Rishi and Sikander Singh Cheema, "Prediction of cardiac patients using IOT software", International Conference on Applications of AI and Machine Learning (ICAML)-2020, Punjabi University, Patiala.

6. Sikander Singh Cheema and Dr. Amardeep Singh, "Simulation Model for Crop Diversification in Indian Punjab", ISSRD International Conference, 25th October, 2020, Noida, India.

7. Sikander Singh Cheema and Dr. Amardeep Singh, "A CLUSTER BASED MODEL FOR DIVERSIFICATION OF CROPS IN INDIAN PUNJAB", International E-Conference on Research and Development in Science, Technology and Management in the Current Era organized by Indian Academicians and Researchers Association, 21st February 2021.

8. Navneet Kaur, Lakhwinder Kaur, Sikander Singh Cheema, "CADx System: A Review on Mammography based approaches for Breast Cancer Detection and Diagnosis", International Conference on Applications of AI and Machine Learning (ICAML)-2021, Punjabi University, Patiala.

INTERNATION BOOK/BOOK CHAPTERS

1. **Sikander Singh Cheema**, Book Title: "Role of Artificial Intelligence and Automation in Modern Age Agriculture, seminar proceeding, 2022.
2. **Sikander Singh Cheema**, Er. Lal Chand, Bhagwant Singh, Chapter Title: "Artificial Intelligence in Machine Learning", Factories of the Future, Wiley, ISBN 978-1-119-86494-3, 2023.
3. **Sikander Singh Cheema**, Er. Lal Chand, Manpreet kaur, Chapter Title: "Understanding Neural Networks", Factories of the Future, Wiley, ISBN 978-1-119-86494-3, 2023.

ARTICLES PUBLISHED IN NEWS PAPERS

Published many articles in newspapers on topics like: Education, Public Policies, and Health etc.

Ph.D. THESIS GUIDED

1. Navneet Kaur, Development of Breast Cancer Detection Technique for Mammogram Images, 2023.

PG THESIS GUIDED

1. Satwinder Singh Judge, Developing One Degree of Freedom Dual Clutch Haptic Actuator, 2013.
2. Gurpreet Singh, Maintaining Client Connectivity and Zero Failover Using Oracle Data Gurad Grid Computing, 2013.
3. Komal Singla, Audio Noise Reduction Using Different Filters, 2014.
4. Rozy Gill, Performance Comparison of Routing Protocols with Mobility and Scalability in MANET, 2014.
5. Amarpreet Kaur, Scalable Energy Efficient Optimized Link State Routing Protocol for Wireless Mesh Networks, 2014.
6. Sukhjot Kaur, Performance Evaluation and Comparison of TORA and GRP Protocols (Hybrid Routing Protocols) using Multimedia Streaming in Mobile AD-HOC Networks under Jelly Fish Attack, 2014.
7. Amandeep Singh, Predicting Geographical Position of a Sensor Node using Location Aided Routing Protocol in Mobile Wireless Sensor Networks, 2015.
8. Bhupinder Singh, A Novel Technique to Prevent Black Hole Attack in Manet using Secure Clustering, 2015.
9. Manddep Singh, Implementation of Accountability Server for Monitoring of Data over Cloud, 2015.
10. Gagan Jindal, Review Segmentation of Natural Images using HSL Color Space based on K-Mean Clustering, 2015
11. Jasmeen Kaur, Genetically Enhancing the Efficiency of Classification Algorithm, 2016.
12. Arshbeer Kaur, A hybrid Multi-Agent Based Particle Swarm Optimization For Telemedicine System for Neurological Disease, 2016
13. Pankaj Goyal, Investigation into Enhancing/Customizing Information Extraction from Closed Domain Text by Post-Processing the Results of Stock IE Modules, June, 2017.

14. Simranjeet Kaur, Credit Card Fraud Detection using Heterogeneous Imbalanced Feature Correction and Supervised Classification, July, 2017.
15. Parmeet Kaur, Crop Simultion Model for Malwa Region Punjab, 2017.
16. Simranjot Kaur, Big Data and Analysis of Weather Forecasting System, 2017.
17. Rimaldeep Kaur, The Role of Crop Diversification towards High-Value Crops in Punjab, 2018.
18. Radhika Sethi, Crop Diversification using Clustering Algorithm K-Means in Indian-Punjab, 2018.
19. Amaan, Detection and Recognition of Number Plates on Vehicles Using Machine Learning, 2020.
20. Shavi Rishi, Prediction of cardiac patients using IOT software and Machine Learning Techniques, 2020.
21. Pawanpreet, A hybrid approach for crop selection to obtain higher yield, 2020.
22. Ranbir Gagat, To Increase accuracy of MIN-MAX K MEAN Clustering in Data Mining, 2021.
23. Bhagwant Singh, Implementation of ransomware and proposed solution for detection and prevention, 2022.
24. Manpreet Kaur, Crop yield prediction using machine learning techniques, 2022

LANGUAGES

Proficient in Punjabi, English and Hindi.

SUBJECT TAUGHT

UG Level

- Operating Systems
- Computer Networks
- Database Management System
- RDBMS Using PL/SQL
- System Simulation & Modeling
- Artificial Intelligence
- Data Mining & Warehousing
- Network Security
- Software Engineering
- Theory of Computation
- Object Oriented Programming using C++

PG Level

- Computer Network Technologies
- Advance Database Systems
- Network Security
- Data Warehousing & Data Mining
- Artificial Intelligence and Its Applications

TECHNICAL PROFICIENCY

Programming Languages: Turbo C++, Java, Python, Prolog.

Front Ends: Visual Basic.

Back Ends: Microsoft Access, SQL Server, MySQL.

Simulator: MATLAB.

Networking: LAN/WAN Designing.

Operating Systems: Windows variants, UNIX, LINUX.

Analysis Tools: Weka, BASE, ACID.

REFERENCES

FROM ACADEMIA

Dr. **Trilok Chand**
Professor
Computer Science & Engineering
PEC University of Technology
Chandigarh, India.

Dr. Divya Bansal
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Computer Science & Engineering
PEC University of Technology
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Mr. Sachin Sharma
Senior Manager
INFOSYS Chandigarh

CONTACT

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