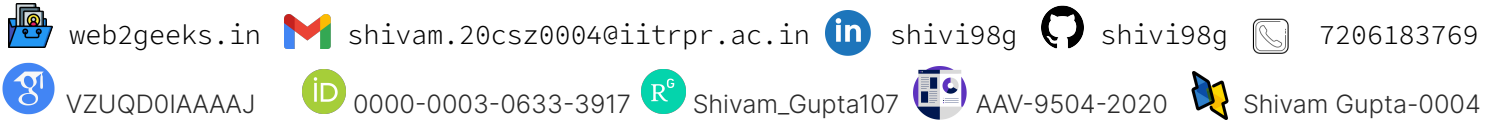


Shivam Gupta

Prime Minister Research Fellow



EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY ROPAR | PRIME MINISTER RESEARCH FELLOW

September 2020 – Current | Punjab, India

- Direct Ph.D. (CSE) research scholar under the guidance of Dr. Shweta Jain.
- **Thesis Title:** Fair Algorithms for Machine Learning.
- **Cum. GPA:** 8.75/10.0

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY SONEPAT, INDIA (MENTOR & CAMPUS NIT KURUKSHETRA) | B.TECH (INFORMATION TECHNOLOGY)

August 2016 – May 2020 | Punjab, India

- B.Tech project under the guidance of Dr. Virender Ranga.
- **Major Project Title:** 1) Healthcare system for epilepsy seizure prediction.
- **Minor Project Title:** Pathological analysis of blood cells using deep learning.
- **Cum. GPA:** 9.6216/10.0 (Rank 1)

CENTRAL BOARD OF SECONDARY EDUCATION (CBSE) | XIIth | 2016 | 94.20%

CENTRAL BOARD OF SECONDARY EDUCATION (CBSE) | Xth | 2014 | 10.0/10.0

EXPERIENCE

INDIAN INSTITUTE OF TECHNOLOGY ROPAR | PRIME MINISTER RESEARCH FELLOW

September 2020 – Current | Punjab, India

Teaching Assistant: Introduction to computing & DS for AY2020-II, Data mining for AY2021-I, Game theory for AY2021-II, Mathematical foundation of CS for AY2022-I and Machine learning for AY2022-II.

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA, INDIA | GUEST LECTURER

Jan 2021 – Current | PMRF Teaching Deliverable

AURIBISES TECHNOLOGIES PVT. LTD., LUDHIANA, INDIA | CERTIFIED TRAINEE

May 2018 – July 2018 | Python & Machine learning

May 2017 – July 2017 | Java EE

May 2016 – July 2016 | Android application

GAWDS, NIT KURUKSHETRA | BACKEND DEVELOPER | SEP 2016 – JULY 2020

PROJECTS

ANDROID APP DEVELOPMENT

- **Decision Support System for Whitefly (DSSWFLY):** An android project under the guidance of professors at Punjab Agricultural University to help farmers predict whitefly disease in cotton crop on the basis of the weather forecast.
- **Solar Powered Farm:** An android-based Project under the guidance of professors at Punjab Agricultural University to help farmers in setting up solar-powered farms.
- **AnandVihar Society Mobile Application:** Designed an android-based platform for cooperative housing society – AnandVihar, Ludhiana, Punjab to manage all types of basic day-to-day functions like member registration, plot transfer, society fees manager for members, printing list of plot holders, online complaint manager and many more.

WEB DEVELOPMENT

- **Skillcart:** Web portal to bring laborers and customers to one place and help connect with each other. Further integrated Aadhar card validation, SMS API, and SHA encryptions. Technologies used in the project cover JAVA EE, MySQL, Bootstrap, and JavaScript.
- **e-Commerce:** Development of eCommerce website working using Hibernate (JAVA EE), HTML, and CSS.
- **e-library System:** Library management system developed using JSP, MySQL, HTML, CSS, and JavaScript.
- **AnandVihar Society Web Portal:** Designed a web portal using PHP for the society similar to an android application.
- **Food Ordering System:** A PHP, bootstrap-based web portal for online food ordering company where customers can choose from the menu offered by all registered restaurants according to their predefined preferences, pay cash on delivery / online, add items to cart. Restaurants can register at the portal, add, modify, and delete food items in their menus, and see present order details like order list, delivery address, contact, and payment details.
- **CabHatke:** Python GUI-based project to estimate cab prices from one place to another using Google's Geocoder API and UBER's API.

SKILLS

PROGRAMMING

- C/C++ • Java • Python • JavaEE
- MySQL • Android • HTML / CSS
- Linux • L^AT_EX • Spring • Node.js
- Hibernate • Tensorflow • Pytorch
- Javascript • jQuery

TOOLS/PLATFORMS

- Github • Overleaf • Heroku
- Google dialog flow (api.ai)
- Google firebase

HONORS

BEST PAPER AWARD

CONFERENCE ON DEPLOYABLE AI
2022 | RBCDSAI-FCAI, IIT Madras, India
Efficient Algorithms for Fair Clustering with a New Fairness Notion

INDOML TRAVEL GRANT AWARD

INDIAN SYMPOSIUM ON ML
2022 | IIT Gandhinagar, India
For poster presentation & to attend the conference.

ACML STUDENT SCHOLARSHIP

ASIAN CONFERENCE ON ML
2022 | IIT Hyderabad, India
Shortlisted for mentorship session and a travel grant to attend the conference.

GATE (CS) QUALIFIED

GRADUATE APTITUDE TEST IN ENGINEERING
Score 562 | All India Rank 2562

PASSED CAMBRIDGE ESOL TEST

UNIVERSITY OF CAMBRIDGE, UNITED KINGDOM
Preliminary English Test (PET)
Key English Test (KET)

CLEARED JEE MAINS 2016

JOINT ENTRANCE EXAMINATION 2016

NATIONAL CYBER OLYMPIAD

2015 State Rank 5th | 2014 State Rank 9th

NATIONAL STANDARD EXAM (CHEMISTRY)

2015 | In top 10%

PUBLICATIONS

JOURNALS

- [J1.] **Shivam Gupta**, Ganesh Ghalme, Narayanan C. Krishnan, and Shweta Jain. Efficient algorithms for fair clustering with a new notion of fairness. Data Mining and Knowledge Discovery, pages 1–39, 2023 (**Impact factor 5.406**). <https://doi.org/10.1007/s10618-023-00928-6>
- [J2.] **Shivam Gupta**, Kirandeep Kaur, and Shweta Jain. EqBal-RS: Improved matrix factorization for mitigating popularity bias in recommender systems. 2023 (**Under Review Journal of Intelligent Information Systems**).
- [J3.] Ranjana Roy Chowdhury, **Shivam Gupta**, and Sravanthi Chede. World war iii analysis using signed social networks. Social Network Analysis and Mining, 11:1–16, 2021 (**Impact factor 3.87**) (**Equal Contribution**). <https://doi.org/10.1007/s13278-021-00822-3>
- [J4.] Virender Ranga, **Shivam Gupta**, Priyansh Agrawal, and Jyoti Meena. Pathological analysis of blood cells using deep learning techniques. Recent Advances in Computer Science and Communications (Formerly: Recent Patents on Computer Science), 15(3):397–403, 2022 (**Scopus Indexed**). <https://doi.org/10.2174/2666255813999200904113251>
- [J5.] **Shivam Gupta**, Virender Ranga, and Priyansh Agrawal. Epilnet: A novel approach to iot based epileptic seizure prediction and diagnosis system using artificial intelligence. ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal, 10(4):435–452, 2021 (**E-SCI Indexed**). <https://doi.org/10.14201/ADCAIJ2021104435452>
- [J6.] Virender Ranga, **Shivam Gupta**, Jyoti Meena, and Priyansh Agrawal. Automated human mind reading using eeg signals for seizure detection. Journal of Medical Engineering & Technology, 44(5):237–246, 2020 (**Web of Science Indexed**) (**Corresponding Author**).
- [J7.] **Shivam Gupta**, Jyoti Meena, and OP Gupta. Neural network based epileptic eeg detection and classification. ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal, 9(2):23–32, 2020 (**E-SCI Indexed**). <https://doi.org/10.14201/ADCAIJ2020922332>
- [J8.] Hardik Sachdeva, **Shivam Gupta**, Anushka, Khushbu, and Mayank Dave. Improving privacy and security in unmanned aerial vehicles network using blockchain. arXiv preprint arXiv:2201.06100, 2022 (**Accepted in Int. J. of Communication Networks and Distributed Systems**) (**Corresponding Author**).

CONFERENCES

- [C1.] **Shivam Gupta**, Ganesh Ghalme, Narayanan C Krishnan, and Shweta Jain. Group fair clustering revisited – notions and efficient algorithm. International Conference on Autonomous Agents and Multiagent Systems, 2023 (Extended Abstract) (**CORE A* Conference**).
- [C2.] Manan Singh, Sai Srinivas Kancheti, **Shivam Gupta**, Ganesh Ghalme, Shweta Jain, and Narayanan C. Krishnan. Algorithmic recourse based on user's feature-order preference. In Joint International Conference on Data Science & Management of Data (CODS-COMAD), pages 293–294, 2023 (Extended Abstract). <https://doi.org/10.1145/3570991.3571039>
- [C3.] **Shivam Gupta**, Ganesh Ghalme, Narayanan C. Krishnan, and Shweta Jain. Efficient algorithms for fair clustering with a new notion of fairness. Conference on Deployable AI, RBCDSAI-FCAI, IIT Madras, 2022 (**Best Paper Award**).

BOOK CHAPTERS

- [B1.] **Shivam Gupta**, Shweta Jain, Ganesh Ghalme, Narayanan C Krishnan, and Nandyala Hemachandra. Group and individual fairness in clustering algorithms. Book Chapter accepted on AI and Ethics, Springer, 2023 (**Accepted**)

WORKSHOPS

- [W1.] **Shivam Gupta**, Ganesh Ghalme, Narayanan C Krishnan, and Shweta Jain. Group fair clustering revisited – notions and efficient algorithm. Workshop on Games, Agents and Incentives (GAIW), AAMAS 2023, 2023 (Full paper). (**Accepted**)

SYMPOSIUMS/ WORKSHOPS/ CERTIFICATIONS

- 2022:** • Attended Indian Symposium (IndoML) 2022 and Asian Conference on Machine Learning (ACML) 2022.
- 2021:** • Attended Indian Symposium (IndoML) 2021.
- Got shortlisted to attend Google Research Symposium 2021 for Ph.D students in the Asia-Pacific region.
- 2020:** • Completed Data Analysis with Python: Zeros to Pandas course by Jovian.ml.
- Completed ATAL FDP on Data Sciences by Aligarh Muslim University, Quantum Computing by C-DAC, Data Sciences by University of Hyderabad, and Dr. APJ Abdul Kalam Technical University, Lucknow.
 - Attended 5 days workshop on Blockchain by Poornima Institute of Engineering & Technology, Jaipur.
 - Attended workshop on NLP using Python by Jaipur Engineering College & Research Center and Rajasthan Technical University Kota.

ACHIEVEMENTS/ PROFESSIONAL SERVICES

Reviewer: Journal of Super Computing (Springer), Computer in Biology & Medicine (Elsevier), ECML-PKDD 2022 Conference, ICJAI 2023.

- 2020:** • Awarded with Institute Fellowship for Ph.D. research at IIT Ropar.
- Participated in global level programming contest by Computer Society of India, Student Chapter, KJSIEIT, Mumbai.
- 2019:** • Got placement as a Software Engineer (SE) at MAQ Software (a Partner Company of Microsoft Corporation) and as Software Development Engineer (SDE) at Accolite Pvt. Ltd. (Client Company to Morgan Stanley).
- 2017:** • Participated in Hackathon and Excalibur in College's Technical Fest (Techsardha 17).
- 2016:** • Cleared Joint Entrance Examination (JEE) Mains 2016.
- School Topper in Mathematics XIIth Examination conducted by CBSE.

REFERENCES

- Dr. Shweta Jain**, Assistant Professor, Indian Institute of Technology Ropar, India. ✉ shwetajain@iitrpr.ac.in (**Ph.D. Supervisor**)
- Dr. Narayanan C Krishnan**, Associate Professor, Indian Institute of Technology Palakkad, India. ✉ ckn@iitpkd.ac.in (**Research Collaborator**)
- Dr. Ganesh Ghalme**, Assistant Professor, Indian Institute of Technology Hyderabad, India. ✉ ganeshghalme@ai.iith.ac.in (**Research Collaborator**)
- Dr. Nandyala Hemachandra**, Professor, Indian Institute of Technology Bombay, India. ✉ nh@iitb.ac.in (**Research Collaborator**)
- Dr. Virender Ranga**, Associate Professor, Delhi Technological University. (On Leave NIT Kurukshetra) ✉ virender.ranga@nitkr.ac.in (**B.Tech Supervisor**)
- Ishant Kumar**, CEO, Auribises Technologies, Ludhiana, Punjab, India. ✉ ishant.kumar@auribises.com ☎ +91-9915571177 (**Training Supervisor**)