

# Shrey Gupta

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## EDUCATION

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- **Ph.D. in Computer Science, Emory University** 2019 - present  
Advisor: Dr. Avani Wildani | PhD Thesis: Transfer Learning for Spatio-temporal Data.
- **MS in Computational Biology, IIT-Delhi** 2015 - 2017  
Advisor: Dr. Vinod Scaria | Masters Thesis: A Study of Biomedical Information Extraction Systems.
- **BS in Computer Science, Guru Gobind Singh Indraprastha University** 2011 - 2015  
Undergraduate Thesis: Abstractive Text Summarization using Bag-of-words Encoder.

## PUBLICATIONS

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1. Shrey Gupta, Andreas Züfle, Yang Liu, & Avani Wildani, "A Framework for Spatiotemporal Meta-Learning for Estimating Atmospheric Aerosols" (In Preparation)
2. Shrey Gupta\*, Yongbee Park\*, Jianzhao Bi, Suyash Gupta, Andreas Züfle, Avani Wildani, & Yang Liu, "Spatial Transfer Learning for Estimating PM 2.5 for Data-poor Regions" (Accepted ECML-PKDD 2024) (Preprint: arXiv:2404.07308)
3. Shrey Gupta, Alireza Karduni & Emily Wall, "Belief Decay or Persistence? A Mixed-method Study on Belief Movement Over Time." (EuroVis 2023)
4. Shrey Gupta, Jianzhao Bi, Yang Liu & Avani Wildani, "Boosting for Regression Transfer via Importance Sampling." (IJDSA 2023)
5. Aastha Vatsyayan\*, Parul Sharma\*, Shrey Gupta, ..., Vinod Scaria, "DALIA - A Comprehensive Resource of Disease Alleles in Arab Population." (Plos One 2021)

## WORK EXPERIENCE

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- **Research Associate** | Rollins School of Public Health, Emory University Jan'23 - March'24
  - **Transfer learning models for estimating PM<sub>2.5</sub> in developing countries (Advisor: Dr. Yang Liu):**
    - \* Designed novel spatial transfer learning model for estimating PM<sub>2.5</sub> for data-poor regions (developing countries).
    - \* Experiments showed an improvement of 19.34 % over the baseline (accepted at ECML-PKDD 2024). [ [Preprint](#)].
- **Research Associate** | Cognitive and Visualization (CAV) Lab, Emory University Jan'22 - Dec'22
  - **Measuring belief change for people w.r.t time (Advisor: Dr. Emily Wall):**
    - \* Applied Bayesian cognitive modeling to measure how people update their beliefs over time.
    - \* The experiments were validated quantitatively/qualitatively, and the work was accepted at EuroVis'23. [ [Link](#)]
- **Research Assistant** | Wayne State University Aug'18 - May'19
  - **Detecting seizures in neonatal children using EEG data of the brain (Advisor: Dr. Suzan Arslanturk):**
    - \* Applied Bayesian Switching Factor Analysis (BSFA) to map active brain regions during seizures.
    - \* Awarded the Richard Barber Interdisciplinary Research Grant for this project.
- **Research Associate** | IGIB Delhi, India May'15 - June'18
  - **A Study of Biomedical Information Extraction Systems (Advisor: Dr. Vinod Scaria):**
    - \* Developed a Django-based tool for detecting and extracting disease symptoms from clinical texts.
    - \* Deployed the tool at AIIMS, Delhi, enhancing the efficiency by 37% compared to previous clinical tools.
- **Research Intern** | IIT-Madras, India May'14 - Aug'14
  - **Keyword Search in Databases (Advisor: Dr. Rupesh Nasre):**
    - \* Developed a database search algorithm that allows natural-language queries instead of SQL commands.
    - \* The algorithm improved the time complexity by 18% compared to the predecessor algorithm, BANKS.
- **SWE Intern** | Futor Labs, India May'13 - Aug'13
  - **Database Synchronization (Manager: Saurabh Goel):**
    - \* Contributed to database synchronization by developing stored procedures using PL-SQL and MySQL Workbench.
    - \* Improved organizational database update efficiency by 54% introducing a one-click solution to synchronization.

## TEACHING EXPERIENCE

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### 1. Course Instructor

- CS130R Introduction to Python Programming, Emory University [Fall 2020]
- CSC 1500 Fundamental Structures in Computer Science, Wayne State University [Spring 2019]
- CSC 1500 Fundamental Structures in Computer Science, Wayne State University [Fall 2018]

### 2. Teaching Assistant

- CS170 Introduction to Computer Science, Emory University [Fall 2019]
- Introduction to Quantitative Biology, IIIT-Delhi [Winter 2017]
- Computer Architecture, IIIT-Delhi [Monsoon 2016]
- Computer Networks, IIIT-Delhi [Winter 2016]
- Computer Systems Management, IIIT-Delhi [Monsoon 2015]
- Data Structures and Algorithms, IIIT-Delhi [Summer 2015]

## TALKS/PRESENTATION

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- **Poster Presentation:** Transfer and Integration of Knowledge for Spatiotemporal Data (PhD Forum, ECML-PKDD 2024)
- **Poster Presentation:** Sampled-Boosting Regression Transfer for Atmospheric Pollution Prediction (GA Stats Day 2022)
- **Oral Presentation:** Transfer Learning for Predicting PM<sub>2.5</sub> (GRITS Seminar @ Emory University, 2022)

## AWARDS AND HONORS

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- **Travel Grant Recipient**, ACM SIGSPATIAL 2022
- **Conference Grant Recipient**, ACM CIKM 2022
- **Travel Grant Recipient**, USENIX FAST 2020
- **Richard Barber Interdisciplinary Research Fellowship (\$15k)**, Wayne State University, 2019
- **100% Tuition Scholarship for Master's Degree**, DBT India, 2015 - 2017
- **Graduate Aptitude Test in Engineering (GATE) Fellowship**, MHRD, Indian Government 2015 - 2017

## VOLUNTEER, SERVICE AND OUTREACH ACTIVITIES

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- **Reviewer**, IEEE Transactions on Mobile Computing [2024]
- **Reviewer**, PacificVis [2024], Human-Robot Interaction (HRI) [2024]
- **Reviewer**, International Symposium on Spatial and Temporal Data (SSTD) [2023]
- **External Reviewer**, IJCAI [2024], ACM EuroSys [2024], IEEE Vis [2022], Usenix HotOS [2020]
- **Student Volunteer**, International Conference on Advances in Geographic Information Systems [2022]
- **Student Volunteer**, International Conference on Information and Knowledge Management (CIKM) [2022]
- **Student Member**, Cohere For AI and ML Collective [2022]
- **Symposium Organizer**, Symposium on Functional Genomics, CCB@IIIT-Delhi, India. [2017]
- **Symposium Organizer**, Symposium on Network Biology, CCB@IIIT-Delhi, India. [2017]

## STUDENTS/RESEARCHERS ADVISED

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- Yongbee Park, Data Scientist @Ingle, South Korea [2023 - Present]
- David Wang, Undergraduate Senior, Emory University [2020 - 2021]
- Xiuyi Qian, Undergraduate Sophomore, Emory University [Fall 2020]