Siddharth D Jaiswal

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EDUCATION

- **Indian Institute of Technology, Kharagpur, India**   **Prime Minister's Research Fellowship Awardee**
  4th yr Ph.D in Computer Science and Engineering; GPA: 9.5/10   Jan. 2021 – Jan. 2026 (*expected*)

- **Indian Institute of Science, Bengaluru, India**   **Microsoft Data Science Fellowship Awardee**
  Master of Technology(Research) in Computational & Data Science   Aug. 2017 – Jan. 2020

WORK EXPERIENCE

- **Huawei Technologies India Pvt. Ltd., Bengaluru, Karnataka**
  Technical Project Leader; Cloud & AI Business Line   March 2020 – January 2021
  - ∗ Developed query optimization features for the OPENLOOKENG data virtualization engine (open-source).

COMPLETED & ONGOING PROJECTS

- **Ph.D Thesis**   Dept. of CSE, IIT, Kharagpur
  Audit and Mitigation of Social Biases in Human-Interfaced AI Systems   Jan. 2021 – Current
  - ∗ Audit and mitigation of intersectional bias in **Face Recognition Systems** under adversarial conditions through data-centric and model-centric interventions.
  - ∗ Audit of bias in visual search for *non-binary individuals'* clothing on **e-commerce platforms**.
  - ∗ Audit and mitigation of bias in **text-based gender analyzers** through data-centric and model-centric interventions, focussing on *non-binary individuals'*.
  - ∗ Audit and mitigation of biases in **Vision-Language models** and **T2I Diffusion models**.

- **M.Tech(Research) Thesis**   Dept. of CDS, IISc, Bengaluru
  Streaming Partitioning and Distributed Analytics on Large Graphs   Aug. 2017 – Jan. 2020
  - ∗ Developed partitioning heuristics for large streaming graphs with over 130M edges using topological motifs which perform 9X better than the baseline strategies.
  - ∗ Developed a partition-centric distributed algorithm to identify the Eulerian circuit on large graphs with over 500M edges.

- **Course Mini Projects**
  - ◦ Delayed Impacts of the Gender Shades Project   Dept. of CSE, IIT, Kharagpur
    - ∗ Evaluation of Intersectional Bias across ethnicity, gender, age and other dimensions in commercial Face Detection APIs over multiple face image datasets.

  - ◦ Vertex-Centric Path Identification Algorithm   Dept. of CDS, IISc, Bengaluru
    - ∗ Development of a vertex-centric variant of Minimal On-Road Time Route Scheduling algorithm on Time-Dependent Graphs and implementation on Apache Giraph.

PUBLICATIONS

- **Mask-up: Investigating Biases in Face Re-identification for Masked Faces**
  Under submission; [Arxiv]
- **Breaking the Global North Stereotype: A Global South-centric Benchmark Dataset for Auditing and Mitigating Biases in Facial Recognition Systems**
  Upcoming Publication at AAAI/ACM AIES 2024 [Arxiv]   San Jose, USA
- **A Deep Dive into the Disparity of Word Error Rates Across Thousands of NPTEL MOOC Videos**
  Published at AAAI ICWSM 2024 [Proceeding]   Buffalo, USA
- **Auditing Gender Analyzers on Text Data**
  Published at IEEE/ACM ASONAM 2023 [Proceeding]   Kusadasi, Turkey
- **A History of Diversity in the Web (Conference)**
  Published at The ACM WebConference 2023 (Companion) [Proceeding]   Austin, USA
- **Marching with the Pink Parade: Evaluating Visual Search Recommendations for Non-binary Clothing Items**
  Published at ACM CHI 2022 (Case Studies) [Proceeding]   New Orleans, USA & Hybrid
- **Two-Face: Adversarial Audit of Commercial Face Recognition Systems**
  Published at AAAI ICWSM 2022 [Proceeding]   Atlanta, USA & Hybrid
- **Platform Governance: Past, Present and Future**
  Published in ACM GetMobile: Mobile Computing and Communications 26 (1) 2022 [Journal]
- **A Partition-centric Distributed Algorithm for Identifying Euler Circuits in Large Graphs**
  Published at HPBDC 2019, co-located with IEEE IPDPS 2019 [Proceeding]   Rio de Janeiro, Brazil

Research Internships

- **Explainable Audits for Face Recognition Systems**   L3S Research Centre, LUH, Germany
                                                               August 2023 – November 2023
  - ∗ Development of semantically explainable audits for the task of face matching in Face Recognition Systems.

- **Online Algorithms for Facility Location Problem**   ACMU, Indian Statistical Institute, Kolkata
                                                               June 2015 – July 2015
  - ∗ Development of an Online Algorithm for placing a new server amongst an existing configuration of servers and customers given certain constraints. A conjecture and an algorithm are suggested based on observations of some test cases.

- **Approximation Algorithms for DVRP on Trees**   ACMU, Indian Statistical Institute, Kolkata
                                                          December 2014
  - ∗ Development of an approximation bound for Distance Constrained Vehicle Routing Problem (DVRP) on Trees. Also proved that the Distance Constrained Vehicle Routing Problem on a Tree is NP Complete.

Programming Skills

- **Languages**: Python, Java, C++   **Libraries**: Scikit-learn, Numpy, Pandas, Pytorch, Matplotlib

Relevant Coursework

Indian Institute of Technology	**Indian Institute of Science**
◦ AI & Ethics	◦ Scalable Systems for Data Science
◦ Deep Learning	◦ Game Theory
◦ High Performance Scientific Computing	◦ Introduction to Scalable Systems

Visits, Fellowships & Awards

Visits

- Attended the ACM India ARCS Symposium 2024, Bhubaneswar, India
- Attended the 1st ACM India Pingala Interactions in Computing 2024, Mysore, India
- Selected to attend the SLMath Workshop on Randomization, Neutrality, and Fairness 2023
- Presented a poster, "Uncovering Biases in Face Recognition Systems" at ECAI 2023 Doctoral Symposium, Poland
- Attended the Mediterranean Machine Learning (M2L) Summer School, 2023, Thessaloniki, Greece
- Attended Indian Symposium on Machine Learning, 2022 (IIT Gandhinagar) and 2023 (IIT Bombay)
- Attended Google Research Week by Google Research India, 2023, Bengaluru, India
- Attended the AI Ethics and Governance (Turing Commons) Training by The Alan Turing Institute, 2022, Online
- Attended the 1st Greek ACM-W Chapter Winter School on Fairness in AI, 2022, Online
- Presented a poster, "STEM: STreaming Edge Partitioner based on Motifs" at the 2nd R-CCS International Symposium and the 4th R-CCS HPC Youth Workshop, 2020, RIKEN Centre for Computational Science, Kobe, Japan
- Presented a poster, "Incremental Algorithms for PageRank and k-core on Dynamic Graphs" at Student Research Symposium, HiPC 2017, Jaipur, India

Fellowships

- Awarded the Prime Minister's Research Fellowship (PMRF) [January 2022] by MoE, Govt. of India for PhD studies.
- Awarded the Microsoft Data Science Fellowship [August 2017] by Microsoft India for M.Tech(Research) studies.

Awards

- Awarded ACM India Travel Grant to attend ACM-I PIC 2024 & ACM-I ARCS 2024
- Awarded IndoML Travel Grant to attend IndoML 2022 & 2023
- Awarded Google Research India Travel Grant to attend Google Research Week 2023
- Awarded the Microsoft Research India Travel Grant to attend the ACM WebConference, 2023 in Austin, USA
- Awarded the ACM India IARCS Travel Grant to attend the ACM WebConference, 2023 in Austin, USA
- Awarded the IEEE TCSS Travel Grant to attend IEEE IPDPS, 2019 in Rio de Janeiro, Brazil

Talks

- Tutorial on "AI & Ethics" at 10th International Conference on Pattern Recognition and Machine Intelligence (PReMI) 2023, Kolkata, India
- Presentation on "A History of Diversity in The Web (Conference)" at 32nd ACM The Web Conference (History of the Web), 2023, Austin, USA
- Presentation on "Marching with the Pink Parade: Evaluating Visual Search Recommendations for Non-binary Clothing Items" at ACM CHI (Case Studies), 2022, Virtual
- Podcast (Panoptic Talks) on "Identifying the Bias in Facial Recognition Technology" with the Internet Freedom Foundation, India

Extracurricular Activities & Service

- Reviewer– AAAI/ACM AIES (2024), ACM CSCW (2023, 2024), ACM TheWebConference (2024, 2025)
- Teaching Assistant(Aug-Nov 2024), CS60092: Information Retrieval, Dept. of CSE, IIT, Kharagpur
- Teaching Assistant(Jan-Apr 2024), CS21004: Formal Language and Automata Theory, Dept. of CSE, IIT, Kharagpur
- Teaching Assistant(Jan-Apr 2023), CS60016: AI & Ethics, Dept. of CSE, IIT, Kharagpur
- Teaching Assistant(Nov 2022-Jan 2023), CS10003: Programming and Data Structures, Dept. of CSE, IIT, Kharagpur
- Teaching Assistant(Jan-Apr 2022), CS60016: AI & Ethics, Dept. of CSE, IIT, Kharagpur
- Teaching Assistant(Aug-Nov 2021), CS29003: Algorithms Lab, Dept. of CSE, IIT, Kharagpur
- Teaching Assistant(Mar-June 2021), CS19003: Programming and Data Structures Lab, Dept. of CSE, IIT, Kharagpur
- Teaching Assistant(Aug-Dec 2019), DS221: Introduction to Scalable Systems, Dept. of CDS, IISc, Bengaluru
- Student Volunteer- ACM FAccT (2021, 2022), ACM CSCW (2021, 2022), NeurIPS 2021, WWW 2022
- Student General Secretary, IEEE Student Branch Chapter, Tezpur Central University
- Organizer of TEDxTezpurUniversity held in April, 2014.

I declare that all the information provided above is true to my knowledge. References can be provided on request.