Govind S. Sankar

E-mail: govind.subash.sankar@duke.edu

Education

Duke University, Durham, USA — **2021** - Present
PhD Candidate, Department of Computer Science. — GPA: 4.0/4.0

Indian Institute of Technology, Madras, Chennai, India — **2016 - 2021**
Dual Degree (Bachelor + Master) of Technology in Electrical Engineering. — CGPA: 9.53/10
Minor in Computing.

Publications

Authors in alphabetical order, unless otherwise noted*.

1. Santhini K. A., Kamesh Munagala, Meghana Nasre, and **Govind S. Sankar**. Group Fairness and Multi-Criteria Optimization in School Assignment. In *Symposium on Foundations of Responsible Computing (FORC 2025)*, 2025. **Best Student Paper**
2. Kamesh Munagala and **Govind S. Sankar**. Individual fairness in graph decomposition. In *International Conference on Machine Learning (ICML)*, 2024. **Spotlight Paper (3.5% acceptance rate)**
3. Aditya Bhaskara, Sreenivas Gollapudi, Sungjin Im, Kostas Kollias, Kamesh Munagala, and **Govind S. Sankar**. Data exchange markets via utility balancing. In *Proceedings of the ACM Web Conference (WWW)*, 2024
4. Kamesh Munagala, **Govind S. Sankar**, and Erin Taylor. Probabilistic Metric Embedding via Metric Labeling. In *Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques (APPROX/RANDOM)*, 2023
5. Jacob Focke, Dániel Marx, Fionn Mc Inerney, Daniel Neuen, **Govind S. Sankar**, Philipp Schepper, and Philip Wellnitz. Tight complexity bounds for counting generalized dominating sets in bounded-treewidth graphs. In *Proceedings of the 2023 Annual ACM-SIAM Symposium on Discrete Algorithms (SODA)*, 2023
   - Journal version to appear in *Transactions on Complexity Theory*.
6. Dániel Marx, **Govind S. Sankar**, and Philipp Schepper. Anti-Factor Is FPT Parameterized by Treewidth and List Size (But Counting Is Hard). In *17th International Symposium on Parameterized and Exact Computation (IPEC)*, 2022
   - Journal version published in *Algorithmica* (2024).
7. Santhini K. A., **Govind S. Sankar***, and Meghana Nasre. Optimal matchings with one-sided preferences: Fixed and cost-based quotas. In *International Conference on Autonomous Agents and Multiagent Systems, (AAMAS)*, 2022
   - Journal version to appear in *Autonomous Agents and Multi-Agent Systems* (JAAMAS).
8. Dániel Marx, **Govind S. Sankar**, and Philipp Schepper. Degrees and gaps: Tight complexity results of general factor problems parameterized by treewidth and cutwidth. In *48th International Colloquium on Automata, Languages, and Programming, (ICALP)*, 2021
9. **Govind S. Sankar***, Anand Louis, Meghana Nasre, and Prajakta Nimbhorkar. Matchings with group fairness constraints: Online and offline algorithms. In *Proceedings of the Twenty-Ninth International Joint Conference on Artificial Intelligence, (IJCAI)*, 2021

Service

Reviewer for NeurIPS (2024), ICML (2025), AISTATS (2025).
Subreviewer for FOCS (2023), STOC (2025), SOFSEM (2025).

Invited Talks

1. *Group Fairness and Multi-criteria Optimization in School Assignment.*
   Workshop on Algorithmic Mechanism Design, FSTTCS 2024.

Professional Experience

Uber — Sunnyvale, CA
PhD Software Engineer Intern, ML — **May 2025 - Present**

- Architected and developed a Mixture of Experts (MoE) model to enhance fraud detection capabilities, leveraging Uber's internal Michelangelo machine learning platform for distributed training and deployment.
- Improved the maintainability of existing XGBoost models by replacing a legacy Spark-based feature transformation DSL with a modern and more flexible pipeline using PyTorch transformers.

Agnikul Cosmos — Chennai, India
Software Development Intern — **Dec 2017 - Aug 2018**

- Developed a Matlab-based tool to simulate the trajectory of a rocket. The tool was validated by members of the Indian Space Research Organization (**ISRO**) and National Institute of Advanced Studies, India.

Teaching Experience

Teaching Assistant, Duke University

- COMPSCI630 : *Randomized Algorithms* — **Jan - Apr 2025**
  Graduate course with $\sim$ 20 students.
- COMPSCI230 : *Discrete Math* — **Jan - Apr 2022**
  Undergraduate course with $\sim$ 120 students.
- COMPSCI230 : *Discrete Math* — **Aug - Dec 2021**
  Undergraduate course with $\sim$ 120 students.

Teaching Assistant, Indian Institute of Technology, Madras

- CS6845 : *Pseudorandomness* — **Feb - May 2021**
  Graduate elective with $\sim$ 5 students.
- CS6130 : *Advanced Graph Algorithms* — **Sep - Dec 2020**
  Graduate elective with $\sim$ 20 students.
- CS2200 : *Languages, Machines and Computation* — **Jan - May 2020**
  Undergraduate core course with $\sim$ 80 students.

Relevant Coursework

- Approximation Algorithms
- Theory of Computation
- Parameterized Complexity
- Cryptography
- Database Systems
- Sublinear Algorithms
- Computability & Complexity
- Pseudorandomness
- Information Theory
- Design & Analysis of Algorithms
- Topics in Complexity Theory
- Boolean Functions
- Game Theory

Honours and Awards

- Institute Merit Prize (IIT Madras, 2020)
- KVPY Fellowship (2014)
- NTSE Scholarship (2012)

Miscellaneous

- Volunteer for the National Service Scheme, India. Participant in the Science Teaching Kit project, aimed at introducing children from rural areas to Science through easy to understand experiments.
- Headed the Quiz Club, and managed a team of 20 coordinators that oversaw all quizzing activities at the Indian Insititute of Technology, Madras.