

# Bishwamittra Ghosh

## Research Interests

Fairness, interpretability, and explainability in machine learning  
Formal verification of machine learning

## Education

- 01.18–06.23 **Ph.D. in Computer Science**, *National University of Singapore*, Singapore.  
(Expected) Thesis advisor: Dr. Kuldeep S. Meel
- 02.13–09.17 **BSc. in Computer Science and Engineering**, *Bangladesh University of Engineering and Technology*, Bangladesh, CGPA: 3.83 out of 4 (with Honours).  
Thesis advisor: Dr. Mohammed Eunus Ali
- 2012 **Higher Secondary Certificate**, *Satkhira Government College*, Satkhira, Bangladesh, GPA: 5 out of 5.  
Group: Science
- 2010 **Secondary School Certificate**, *Satkhira Government High School*, Satkhira, Bangladesh, GPA: 5 out of 5.  
Group: Science

## Publications

### Conference Papers

- FACCT-23 “How Biased are Your Features?”: Computing Fairness Influence Functions with Global Sensitivity Analysis  
[Bishwamittra Ghosh](#), Debabrota Basu, Kuldeep S. Meel
- VLDB-23 Neighborhood-based Hypergraph Core Decomposition  
Naheed Anjum Arafat, Arijit Khan, Arpit Kumar Rai, [Bishwamittra Ghosh](#)
- AAAI-22 Algorithmic Fairness Verification with Graphical Models  
[Bishwamittra Ghosh](#), Debabrota Basu, Kuldeep S. Meel
- AAAI-21 Justicia: A Stochastic SAT Approach to Formally Verify Fairness  
[Bishwamittra Ghosh](#), Debabrota Basu, Kuldeep S. Meel
- AAAI-20 A MaxSAT-based Framework for Group Testing  
Lorenzo Ciampiconi, [Bishwamittra Ghosh](#), Jonathan Scarlett, Kuldeep S. Meel
- ECAI-20 Classification Rules in Relaxed Logical Form  
[Bishwamittra Ghosh](#), Dmitry Malioutov, Kuldeep S. Meel
- AIES-19 IMLI: An Incremental Framework for MaxSAT-Based Learning of Interpretable Classification Rules  
[Bishwamittra Ghosh](#), Kuldeep S. Meel

VLDB-18 The Flexible Socio Spatial Group Queries  
Bishwamittra Ghosh, Mohammed Eunus Ali, Farhana M. Choudhury, Sajid Hasan Apon, Timos Sellis, Jianxin Li

### Journal Papers

JAIR-22 Efficient Learning of Interpretable Classification Rules  
Bishwamittra Ghosh, Dmitry Malioutov, Kuldeep S. Meel

TSAS-21 Social-Spatial Group Queries with Keywords  
Sajid Hasan Apon, Mohammed Eunus Ali, Bishwamittra Ghosh, Timos Sellis

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## Professional Experiences

### Conference Talks

AAAI-22, AAAI-21, AAAI-20, ECAI-20, CP-19, VLDB-19, IJCAI-19, AIES-19

### Academic Reviewer

ICML (2023), AAAI (2023, 2022), NeurIPS (2022, 2021), AIES (2022), CAV (2023), TKDE (2020)

### Research Intern

03.23–05.23 Max Planck Institute For Software Systems, Saarbrücken, Germany  
11.21–02.22 INRIA, Lille-Nord, France  
06.21–08.21 Goldman Sachs, Singapore  
03.20–06.20 Max Planck Institute For Software Systems, Kaiserslautern, Germany

### Graduate Assistant

2018–2021 School of Computing, National University of Singapore

### Lecturer

10.17–01.18 Department of CSE, United International University (UIU), Bangladesh

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## Technical Skills

Advanced Python, Solvers (SAT, MaxSAT, SSAT, SMT, ILP),  $\text{\LaTeX}$   
Intermediate TensorFlow, C/C++, Java

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## References

- Kuldeep S. Meel  
Assistant Professor, School of Computing, National University of Singapore, Singapore  
Email: meel+recos@comp.nus.edu.sg
- Daniel Neider  
Professor, Technical University of Dortmund, Germany  
Email: daniel.neider@cs.tu-dortmund.de
- Debabrota Basu  
Faculty, School, INRIA, Lille-Nord, France  
Email: debabrota.basu@inria.fr