Kush Grover

TUM School of Computation, Information and Technology
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Education

- **Technical University of Munich** — **Munich**
  Ph.D. in Computer Science — *2019–Present*
  Advised by *Prof. Jan Křetínský*
- **Chennai Mathematical Institute** — **Chennai**
  Masters in Computer Science, CGPA: 9.09/10 — *2017–2019*
- **Indian Statistical Institute** — **Bangalore**
  Bachelors in Mathematics, Percentage: 73.46% — *2014–2017*
- **Rajkiya Pratibha Vikas Vidyalaya** — **Delhi**
  Higher secondary exam(2014), Percentage: 90.8% — *2007–2014*
  Senior Secondary Exam(2012), CGPA: 8.8/10

Research Interests

- Verification and Synthesis
- Model Checking
- Learning
- Temporal Logics
- Stochastic systems
- Motion Planning

Publications

- *Learning Explainable and Better Performing Representations of POMDP Strategies.*
  Alexander Bork, Debraj Chakraborty, Kush Grover, Jan Křetínský and Stefanie Mohr.
  TACAS 2024: Tools and Algorithms for the Construction and Analysis of Systems, 2024
- *Model checking for proving and improving fault tolerance of satellites*
  Jonis Kiesbye, Kush Grover, and Jan Křetínský.
  AEROCONF 2023: IEEE Aerospace Conference, 2023
- *Anytime guarantees for reachability in uncountable markov decision processes*
  Kush Grover, Jan Křetínský, Tobias Meggendorfer, and Maximilian Weininger.
  CONCUR 2022: International Conference on Concurrency Theory 2022
- *Planning via model checking with decision-tree controllers*
  Jonis Kiesbye, Kush Grover, Pranav Ashok, and Jan Křetínský.
  ICRA 2022: International Conference on Robotics and Automation, 2022
- *Semantic abstraction-guided motion planning for scltl missions in unknown environments*
  Kush Grover, Fernando S Barbosa, Jana Tumova, and Jan Křetínský.
  RSS 2021: Robotics: Science and Systems XVII

- *Guaranteed trade-offs in dynamic information flow tracking games*
  Maximilian Weininger, Kush Grover, Shruti Misra, and Jan Křetínský.
  CDC 2021: EEE Conference on Decision and Control, 2021

Skills and experiences

Experiences

- **Teaching Assistant Experience:** Theory of Computation 2018-19, Model Checking and System Verification 2018-19, Model Checking 2020-21, Quantitative Verification 2020-21, Model Checking 2021-22, Quantitative Verification 2021-22, Fundamental Algorithms 2022-23.
- **Supervision:** Supervised a Bachelor's thesis.
- **Talks:** Highlights 2020, MOVEP 2020, Highlights 2021, RSS 2021, LiVe 2022, Highlights 2022, MOVEP 2022, RAMC 2022.
- **Reviewer for Journals:** Information and Computation.
- **Sub-reviewer for conferences:** AISoLA 2023, ICALP 2023, QEST 2023, LICS 2022, TACAS 2022, VMCAI 2022, QEST 2022, CONCUR 2021, TACAS 2021, ICTAC 2020, QEST 2020.
- **Artifact evaluation:** CAV 2023, TACAS 2022, TACAS 2021.

Computer Skills

- **Programming Languages:** Python, C, C++, Java
- **Model Checkers:** NuSMV, PRISM, STORM and UPPAAL.
- **Others:** LaTeX

Selected Coursework

- **Mathematics:** Linear Algebra, Ring Theory, Group Theory, Field Theory, Multivariate Calculus, Real Analysis, Probability Theory.
- **Computer Science:** Theory of Computation, Mathematical Logic, Logic Automata and Games, Games on Graphs, Model Checking and Systems Verification, Machine Learning, Complexity Theory, SMT Solvers.

Achievements

- Awarded INSPIRE Scholarship by DST, Govt. of India for higher studies.
- Secured rank 11 and 12 in national level examinations JEST 2017 and JEST 2019 respectively.

Interests and extra-curricular activity

- Travelling
- Gaming
- Guitar
- Photography

Personal Information

- Nationality: Indian
- Languages known: English, Hindi

References

- **J. Křetínský** (Professor, Technical University of Munich and Masaryk University)
  Email: jan.kretinsky@tum.de
- **Jana Tumova** (Associate Professor, KTH Royal Institute of Technology)
  Email: tumova@kth.se
- **B. Srivathsan** (Associate Professor, Chennai Mathematical Institute)
  Email: sri@cmi.ac.in