

# SUGUMAN BANSAL

Computer Science Graduate Student

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## EDUCATION

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Pursuing **PhD** in COMPUTER SCIENCE, **Rice University**, Houston, TX Aug. 2016 - Present  
Advisors: Prof. Swarat Chaudhuri and Prof. Moshe Y. Vardi  
Research Interests: Formal methods in Game Theory, Quantitative verification

**MS** in COMPUTER SCIENCE, **Rice University**, Houston, TX Aug. 2014 - Sept. 2016  
Advisor: Prof. Swarat Chaudhuri  
Thesis Title: Algorithmic Analysis of Regular Repeated Games

**BSc (with Honors)** in MATHEMATICS and COMPUTER SCIENCE Aug. 2011 - May 2014  
**Chennai Mathematical Institute (CMI), Chennai, India**  
GPA (Major): 9.2/10

## DISTINCTIONS AND AWARDS

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- **Rice Engineering Alumni Graduate Grant** 2017  
Awarded by the Rice Engineering Alumni (REA) to one graduate student each year
- **Gold Medal at the ACM Student Research Competition at POPL 2016** 2016
- **Andrew Ladd Graduate Fellowship** 2015 - 2016  
Awarded by the Rice Computer Science Department and Ken Kennedy Institute for excellence in Computer Science
- **CMI Undergraduate Scholarship** 2011 - 2014  
Scholarship awarded by CMI to undergraduate students for excellence in academics
- **KVPY Science Fellowship (Govt. of India)** 2008  
Fellowship awarded by the Ministry of Science and Technology, Government of India, for excellence in Basic Sciences
- **Travel grants**  
CRA-W Grad Cohort Graduate Grant (2017), ACM SRC (POPL) Travel Grant (2016), MSR Faculty Summit Travel Grant (2016), Off The Beaten Track Travel Grant (2016), NSF-CAV Travel Grant (2015), MSR Summer School Travel Grant (2012)

## HONORS

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- Selected to participate in **CRA-W Grad Cohort 2017** (April 2017)
- Invited to **Dagstuhl Seminar on Game Theory, AI, Logic and Algorithms** (March 2017)
- Invited to **MSR Faculty Summit 2016** (July 2016)
- Selected to participate in **International Summer School, Marktoberdorf** (August 2015)

## PUBLICATIONS (PEER-REVIEWED)

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1. **Comparator automata in quantitative verification**  
Suguman Bansal, Swarat Chaudhuri, Moshe Y. Vardi  
Logic in Computer Science (LICS) 2017
2. **Chanakya: Computer-Aided Strategic Reasoning**  
Suguman Bansal, and Swarat Chaudhuri  
Presented at Off the Beaten Track (OBT) 2016 at POPL 2016

### In preparation / Under submission

1. **QuantIP: A solver for discounted-sum inclusion**  
Suguman Bansal, Swarat Chaudhuri, Moshe Y. Vardi  
Formal Methods in Computer-Aided Design (FMCAD) 2017
2. **Model checking Regular Repeated Games**  
Suguman Bansal, Swarat Chaudhuri, Kuldeep S. Meel

## POSTERS

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1. *Reasoning about Incentive Compatibility* appeared at *ACM Student Research Competition 2016* at POPL 2016, January 2016, St. Petersburg, USA  
Awarded **Gold Medal** at the ACM SRC at POPL 2016

## RESEARCH TALKS

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1. Comparators for quantitative games *Saarland University, Saarbrücken, Germany, March 2017*
2. Comparators for quantitative games *Dagstuhl Seminar on Game Theory in AI, Logic and Algorithms, Dagstuhl, Germany, March 2017*
3. Reasoning about Selfishness *Jawaharlal Nehru University, New Delhi, India, December 2016*
4. Algorithmic Analysis of Regular Repeated Games *Rice University, April 2016*
5. Reasoning about Selfishness *Off the Beaten Track 2016, St. Petersburg, USA, January 2016,*
6. Reasoning about Incentive Compatibility *ACM Student Research Competition 2016 at POPL 2016, St. Petersburg, USA, January 2016*

## TEACHING ASSISTANT

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- COMP 540: Statistical Machine Learning Spring 2017
- COMP 382: Reasoning about Algorithms Fall 2016
- COMP 582: Design and Analysis of Algorithms (Graduate Level) Fall 2015
- COMP 481: Automata, Formal Languages and Computability Spring 2015, Spring 2016

## INTERNSHIP

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**Bell Labs**, Murray Hill, New Jersey, USA June 2017 - Aug. 2017  
Research Intern (Mentors: Dr. Kedar Namjoshi and Dr. Michael Emmi)

**Indian Statistical Institute**, Kolkata, India Summer 2012  
Summer Intern (Mentor: Prof. Shubhomay Mitra)

- On the applications of LLL Algorithm to crypto-analysis

- Designed, implemented, and analysed security of a Lattice-based cipher

## **SERVICE**

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- **Reviewer**
  - Tools and Algorithms for Construction and Analysis of Systems (TACAS) 2017 (Sub-reviewer)
  - Communications of the ACM (CACM) 2016
  - International Joint Conference on Artificial Intelligence (IJCAI) 2016 (Sub-reviewer)
- Judge, Rice Undergraduate Research Symposium, Rice University (2016)
- Coordinator, Dept. of Computer Science Weekly Colloquium, Rice University (2015-2016)
- Academic Coordinator, Rice Computer Science Graduate Student Association (2015-2016)
- Publicity Coordinator, Indian Students at Rice (ISAR) (2015-2016)
- Advertising Coordinator, 90 Second Thesis Competition, Rice University (2015)
- Head, Fiesta 2012, CMI's annual collegiate festival (2012)
- Founder and Head, Environment Club, CMI (2011-2014)
- Volunteer, CMI Workers Welfare Activities, CMI (2011-2014)