

Agnishom Chattopadhyay

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EDUCATION

- **Rice University** Houston, TX
PhD Candidate in Computer Science; Advisor: Konstantinos Mamouras 2019 – 2024 (expected)
- **Chennai Mathematical Institute** Chennai, India
B.Sc. (Hons.) in Mathematics and Computer Science; CGPA: 9.12/10.0 2016 – 2019

EXPERIENCE

- **Vacationlabs** Goa, India
Web Development Intern May – July 2018
 - Development of a Analytics Dashboard. Backend Development with **Haskell**. **Servant** for WebAPI, **Opaleye** for SQL Queries, **Hedis** for communicating with Redis. Frontend Development with **Elm**.
- **Brilliant.Org** Remote
Consultant 2016 – 2019
 - **Content Development and Moderation:** Designing problems for weekly showcase and community feed. Moderation for Computer Science and Combinatorics. Development of Course Curricula.

RESEARCH VISITS

- **ISI - R. C. Bose Centre for Cryptology and Security** Kolkata, India
Mentor: Ansuman Banerjee May – July 2017
 - Modified the **Symbolic Execution Engine** angr for logging system calls made along execution paths
- **LaBRI, Université de Bordeaux** Bordeaux, France
Mentor: Anca Muscholl, Filip Mazowiecki May – July 2019
 - **Pumping Lemma for Weighted Automata:** Extended existing pumping lemmas for weighted automata to different semirings
 - Complexity of the equivalence problem for **Streaming-String Transducers**
- **Faculty of Mathematics and Mechanics, University of Warsaw** Warsaw, Poland
Mentor: Filip Mazowiecki, Wojciech Czerwiński May – July 2022
 - **Reachability Sets of Vector Additon Systems:** Inclusion problem of reachability sets. Other variants of the homestate problem.

SELECTED PUBLICATIONS & PROJECTS

- **Software-Hardware Codesign for Efficient in-Memory Regular Pattern Matching** PLDI
L. Kong, Q. Yu, A. Chattopadhyay, A.L. Glaunec, Y. Huang, K. Mamouras, K. Yang 2022
 - An **ASIC Based Regular Expression Matcher** that efficiently handles numeric counting constraints. (Paper, Tool)
- **A Verified Online Monitor for Metric Temporal Logic with Quantitative Semantics** RV
A. Chattopadhyay, K. Mamouras 2020
 - An OCaml library for **quantitative temporal logic monitoring**, verified with Coq. (Paper, Tool)

SELECTED ACHIEVEMENTS

- **Indian National Olympiad in Informatics** (hosted by IARCS)
National Qualifier 2016
- **13th National Cyber Olympiad** (hosted by SOF)
All India Rank: 1 2014

SKILLS

- **Languages:** Python, Java, Rust, Haskell, C/C++
- **Technologies:** Coq, Mathematica, SQL, Web Technologies, Linux