

ABHINAV AGGARWAL

CURRICULUM VITAE

PERSONAL INFORMATION

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CURRENT ADDRESS B19 Travelstead Hall, University of New Mexico, Albuquerque NM

CURRENT AFFILIATION

UNIVERSITY OF NEW MEXICO
Research Assistant

Fall 2014 - Present - Working on interactive communication and resource competitive analysis.

EDUCATION

UNIVERSITY OF NEW MEXICO
Doctor of Philosophy

2014 - Present - SCHOOL : Department of Computer Science, School of Engineering
ADVISOR : Prof. JARED SAIA
GPA : 4.15/4.0

INDIAN INSTITUTE OF TECHNOLOGY, ROORKEE
Master of Technology / Bachelor of Technology

2009 - 2014 - SCHOOL : Department of Computer Science and Engineering
ADVISOR : Prof. PADAM KUMAR
THESIS : *Comparing Sequential Computer Programs using Truth Preserving Partial Functions*
GPA : 8.99/10

PAST INTERNSHIPS

CORNELL UNIVERSITY
Graduate Research Intern

Fall 2017 - Worked on a reduction from state machine replication to byzantine agreement in the partially synchronous setting.

VISA RESEARCH
Research Intern

Summer 2017 - Worked on distributed systems research, focusing on providing a remote attack prevention and PKI establishment. Filed a provisional patent and two research papers are under progress for submission.

GOOGLE INC.
Software Engineer (Intern)

Summer 2016 - Provisioned an Isolation Manager and studied the feasibility of using Linux control groups for user-level isolation in search queries (Code in C++11).

MICROSOFT IDC
Software Development Engineer (Intern)

Summer
2013 Analyzed test frameworks and dependencies for porting the PDF-API test code to Windows 8.1 architecture. (Code in C++).

MICROSOFT IDC

Software Development Engineer (Intern)

Summer
2012 Optimized VHD (Virtual Hard Disk) comparison tool for dynamic VHDs for efficient virtual machine migration over Windows Hypervisor. (Code in C++ and C#)

UNIVERSITY OF SASKATCHEWAN

Undergraduate Intern

Summer
2011 Created a prototype on Arduino for audio level indication as part of the Opencast Matterhorn Project.

PUBLICATIONS

(Note : In theoretical computer science, it is standard to list author names in alphabetical order.)

REMOTE GATE: INCENTIVE-COMPATIBLE REMOTE CONFIGURATION OF SECURITY GATEWAYS · *arXiv:1709.04569* · Abhinav Aggarwal, Mahdi Zamani, Mihai Christodorescu · 2017

DISTRIBUTED COMPUTING WITH CHANNEL NOISE · *eprint.iacr.org:20170725:171227* · Abhinav Aggarwal, Varsha Dani, Thomas P. Hayes, Jared Saia · 2017

SENDING A MESSAGE WITH UNKNOWN NOISE · (Accepted to ICDCN 2018) *arXiv:1605.04486* · Abhinav Aggarwal, Varsha Dani, Thomas P. Hayes, Jared Saia · 2017

BEATING THE MULTIPLICATIVE WEIGHTS UPDATE ALGORITHM · *arXiv:1708.04668* · Abhinav Aggarwal, José Abel Castellanos Abel, Diksha Gupta · 2017

A SIMILARITY CRITERION FOR SEQUENTIAL PROGRAMS USING TRUTH-PRESERVING PARTIAL FUNCTIONS · *arXiv:1708.05640* · Abhinav Aggarwal, Padam Kumar · 2013

NOVEL AUTHENTICATION SYSTEM USING VISUAL CRYPTOGRAPHY · *In Information and Communication Technologies (WICT), World Congress (pp. 1181-1186). IEEE* · Jaya, Siddharth Malik, Abhinav Aggarwal, Anjali Sardana · 2011

PATENTS

REMOTE CONFIGURATION OF SECURITY GATEWAYS · (Provisional) Patent (US - 62/547,701), Visa Research · Abhinav Aggarwal, Mahdi Zamani, Mihai Christodorescu · 2017

TECHNICAL REPORTS

EVOLVING RANDOM SEQUENCES USING A GENETIC ALGORITHM · *Technical Report*, UNM 2015 · Abhinav Aggarwal

ON THE EQUIVALENCE OF PROBABILISTIC AUTOMATA · *Technical Report*, UNM 2015 · Abhinav Aggarwal

A REPORT ON PROBABILISTIC PROGRAMS AND THEIR VERIFICATION · *Technical Report*, UNM 2015 · Abhinav Aggarwal

VIRTUAL DIFFERENTIAL STORAGE BASED k -ROLLBACK CONCURRENCY CONTROL ALGORITHM IN DISTRIBUTED SHARED MEMORY SYSTEMS · *Technical Report*, IITR 2012 · Abhinav Aggarwal, Rupika Srivastava, Sumit Malik, Kirti Meena, Poonam

TALKS

- Jan 2018 DISTRIBUTED CONSENSUS AND BLOCKCHAINS: A BRIEF TUTORIAL · Indian Institute of Technology Roorkee · India
- Nov 2017 INCENTIVE-DRIVEN REMOTE CONFIGURATION OF SECURITY GATEWAYS · Security Discussion Group (secDG) · Cornell University
- Oct 2017 HOW TO TRUST WITHOUT ANY TRUST? · CITP · Princeton University and MIT-IBM J. Watson AI Lab
- Oct 2017 GLOBAL SDN: ALTRUISTIC ATTACK PREVENTION · MIT CSAIL and University of Cincinnati
- Aug 2017 GLOBAL SOFTWARE DEFINED NETWORKING: THE REMOTE GATE APPROACH · *Intern Research Seminar* · *Visa Research*
- Jun 2017 COMPETING FOR BITS : A RESOURCE COMPETITIVE FRAMEWORK FOR MULTI-PARTY INTERACTIVE COMMUNICATION · *Intern Research Seminar* · *Visa Research*
- Feb 2017 EVIL IRONMAN AND THE TALKATIVE MEN OF NYC · *UNM STEM Research Showcase* · *University of New Mexico*
- Dec 2016 SECURE MULTIPARTY INTERACTIVE COMMUNICATION WITH UNKNOWN NOISE RATE · *Mid-South Theory Day* · *Louisiana State University*
- Sept 2016 A SHORT INTRODUCTION TO ALGEBRAIC MANIPULATION DETECTION CODES · *UNM CS Theory Seminar* · *University of New Mexico*
- Apr 2016 SECURE ONE WAY INTERACTIVE COMMUNICATION · *UNM CS Student Conference* · *University of New Mexico*
- Apr 2015 EQUIVALENCE OF PROBABILISTIC AUTOMATA · *UNM CS Theory Seminar* · *University of New Mexico*

POSTERS

INCENTIVE-DRIVEN REMOTE GATEWAY CONFIGURATION · Great Lakes Security Day, Rochester Institute of Technology · 2017

TEACHING ASSISTANCE

- Fall 2017 DISTRIBUTED CONSENSUS AND BLOCKCHAINS · *Cornell CS 6432*
- Spring 2014 MODELING AND SIMULATION · *IITR CS 501*
- Fall 2013 DISCRETE STRUCTURES · *IITR CS 106*

OTHER INFORMATION

- AWARDS** COUNCIL CHAIR AWARD for service to graduate students · *University of New Mexico* · 2017
- PHI-KAPPA-PHI HONOR SOCIETY AWARD for distinguished graduate student · *University of New Mexico* · 2016
- INSTITUTE SILVER MEDAL for the highest GPA · *Indian Institute of Technology* · 2014
- LEADERSHIP** COUNCIL CHAIR of the Graduate and Professional Student Association (GPSA) · *University of New Mexico* · April 2017 - June 2017
- ORGANIZER of the New Mexico Student Conference for Computer Science (NMSC 2017) · *University of New Mexico* · April 2017
- PRESIDENT of the Computer Science Graduate Student Association (CSGSA) · *University of New Mexico* · 2016-2017
- VICE-CHAIR of the Legislative Steering Committee of GPSA · *University of New Mexico* · 2016-2017
- VICE-PRESIDENT of the Computer Science Graduate Student Association · *University of New Mexico* · 2015-2016
- VICE-PRESIDENT of the Indian Student Association (ISA) · *University of New Mexico* · 2015-2016
- NEW STUDENT LIASON of the Computer Science Graduate Student Association · *University of New Mexico* · 2014-2015
- VOLUNTEERING** INTERNATIONAL TAX VOLUNTEER at the Global Education Office · *University of New Mexico* · March 2017 - April 2017
- VOTING MEMBER of the Graduate and Professional Student Association · *University of New Mexico* · 2015-2017

LAST UPDATED : January 12, 2018