



Arnamoy Bhattacharyya

Research Assistant in University of Toronto

Education and Experience

- 2015–current **Research Assistant**, *Electrical and Computer Engineering*, University of Toronto, *Putting context on cloud applications..*
4.0/4.0
- 2018, 2017, **CAS Intern**, *IBM Toronto Software Lab*, Toronto, Canada, *Anomaly detection*,
2016 Summer *VM Consolidation*.
- 2018, 2017 **Intern**, *Smarking Inc.*, San Francisco, USA, *Anomaly Detection*.
Winter
- 2013–2015 **Research Assistant**, *ETH Zürich*, Zurich, Switzerland, *Performance Modeling*.
- 2014 Summer **Research Aide Student**, *Argonne National Laboratory*, Illinois, USA, *Communi-
cation Modeling*.
- 2011–2013 **MSc**, *University of Alberta*, Edmonton, Canada, 3.8/4.0.
- 2007–2011 **BTech**, *West Bengal University of Technology*, West Bengal, India, 8.56/10.0.

Master thesis

- title *Do Inputs Matter? Using Dependence Profiling to Evaluate Thread Level Specula-
tion in Bluegene/Q*
- supervisors Prof. José Nelson Amaral

Bachelor thesis

- title *Building a 4 bit Quantum ALU*
- supervisors Prof. Kishore Ghosh

Projects

- Huawei '18 Working on evaluating distributed transaction performance of different databases
like Redis, Riak, AntidoteDB.
- VideoComm Helping build a cloud infrastructure for webcam security surveillance company.
Technologies
'18

1922, 30 Charles Street West, Toronto, Ontario, Canada, M4Y1R5

☎ +1 (437) 345 7473 • ✉ arnamoy@ualberta.ca

🌐 www.eecg.toronto.edu/~arnamoyb/

- Smarking '18 Built a Neural Network based prediction system for parking data, built an anomaly detection system for real time parking data.
- IBM '17 Built a Watson Conversation based Chatbot that can deliver system health information.
- Smarking '17 Built a web-service for anomaly detection in both streaming data and historical data.
- IBM '16 Built a VM migration system in cases of system anomaly.
- Smarking '16 Built a web based solution for automatically detecting anomalies in streaming data.
- ETHZurich '15 Built a tool for automatically building performance model of applications.

Publications and Theses

- ISPASS '19 Sahel Sharify, Alan Lu, Jin Chen, Arnamoy Bhattacharyya, Ali Hashemi, Nick Koudas, Cristiana Amza: *An Improved Dynamic Vertical Partitioning Technique for Semi-structured Data*, To appear in 2019 IEEE International Symposium on Performance Analysis of Systems and Software, Madison, Wisconsin
- CloudCom '18 Seyed Ali Joker Jandaghi, Arnamoy Bhattacharyya, Cristiana Amza: *Phase Annotated Learning for Apache Spark Workload Recognition and Characterization* ., In Proceedings 10th IEEE International Conference on Cloud Computing Technology and Science, Cyprus
- ADON at CloudCom '18 Arnamoy Bhattacharyya, Cristiana Amza: *PRET: A Tool for Automatic Phase-based Regression Testing*., In Proceedings in 1st International Workshop on Anomaly Detection on the Cloud and the Internet of Things, Cyprus
- IEEE CLOUD '18 Arnamoy Bhattacharyya, Seyed Ali Joker Jandaghi, Cristiana Amza: *Semantic-Aware Online Workload Characterization and Consolidation*, In Proceedings of IEEE International Conference of Cloud Computing, San Francisco, California
- LCPC '17 Arnamoy Bhattacharyya, Cristiana Amza: *ADLER: Adaptive Sampling for Precise Monitoring*, In Proceedings of 30th International Workshop for Language and Compilers for Parallel Computing, College Station, Texas
- CloudCom '17 Arnamoy Bhattacharyya, Stelios Sotiriadis, Cristiana Amza: *Online Phase Detection and Characterization of Cloud Applications*, In Proceedings of 9th IEEE International Conference on Cloud Computing Technology and Science, Hong Kong.
- CASCON '17 Arnamoy Bhattacharyya, Harsh Singh, Seyed Ali Joker Jandaghi, Cristiana Amza: *Online Detection of Anomalous Applications on the Cloud* , In Proceedings of IBM CASCON, Toronto, Canada
- INDIN '17 Arnamoy Bhattacharyya, Weihang Wang, Christine Tsang, Cristiana Amza: *Semantic Aware Anomaly Detection in Real World Parking Data* In Proceedings of IEEE 15TH International Conference of Industrial Informatics, Emden, Germany
- VEE '17 Sahil Suneja, Ricardo Koller, Canturj Isci, Eyal de Lara, Ali Hashemi, Arnamoy Bhattacharyya, Cristiana Amza: *Safe Inspection of Live Virtual Machines*, In Proceedings of the 13th ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments, Xi'an, China

1922, 30 Charles Street West, Toronto, Ontario, Canada, M4Y1R5

☎ +1 (437) 345 7473 • ✉ arnamoy@ualberta.ca

🌐 www.eecg.toronto.edu/~arnamoyb/

- PPoPP '17 Arnamoy Bhattacharyya, Mike Dai Wang, Mihai Burcea, Yi Ding, Allen Deng, Sai Varikooty, Shafaaf Hossain, Cristiana Amza *POSTER: HythTM: Extending the Applicability of Intel TSX Hardware Transactional Support*, In Proceedings of the 22nd ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming, Austin, Texas
- CloudCom '16 Arnamoy Bhattacharyya, Seyed Ali Joker Jandaghi, Stelios Sotiriadis, Cristiana Amza *Semantic Aware Online Detection of Resource Anomalies on the Cloud*, In Proceedings of 8th IEEE International Conference on Cloud Computing Technology and Science, Luxembourg.
- CNSM '16 Arnamoy Bhattacharyya, Harsh Singh, Seyed Ali Joker Jandaghi, Cristiana Amza *Online Characterization of Buggy Applications Running on the Cloud*, In Proceedings of the 12th International Conference on Network and Service Management, Montreal, Canada.
- CASCON '16 Seyed Ali Joker Jandaghi, Arnamoy Bhattacharyya, Stelios Sotiriadis, Cristiana Amza *Consolidation of Underutilized Virtual Machines to Reduce Total Power Usage*, In Proceedings of IBM CASCON, Toronto, Canada
- A-Test '16 Arnamoy Bhattacharyya, Cristiana Amza *PredSym: Estimating Software Testing Budget for a Bug-free Release*, In Proceedings of the The 7th Workshop on Automating Test Case Design, Selection, and Evaluation (Co located with FSE '16), Seattle, Washington.
- PACT '15 Arnamoy Bhattacharyya, Grzegorz Kwasniewski, Torsten Hoefler *Using Compiler Techniques to Improve Automatic Performance Modeling*, In Proceedings of the 24th international conference on Parallel architectures and compilation techniques (PACT '15), San Francisco, California.
- CASCON '15 Arnamoy Bhattacharyya, Jose Nelson Amaral, Hal Finkel *Data-dependence Profiling to Enable Safe Thread Level Speculation*, In Proceedings of IBM CASCON, Toronto, Canada
- PACT '14 Arnamoy Bhattacharyya, Torsten Hoefler *PEMOGEN: Automatic Adaptive Performance Modeling during Program Runtime*, In Proceedings of the 23rd international conference on Parallel architectures and compilation techniques (PACT '14), Edmonton, Canada. 393-404
- PACT '13 Arnamoy Bhattacharyya *Do inputs matter?: using data-dependence profiling to evaluate thread level speculation in BG/Q*. In Proceedings of the 22nd international conference on Parallel architectures and compilation techniques (PACT '13). 401-402.
- PACT '12 Arnamoy Bhattacharyya *Using Combined Profiling to Decide When Thread Level Speculation is Profitable*. In Proceedings of the 21st international conference on Parallel architectures and compilation techniques (PACT '12). 483-484.
- Thesis Arnamoy Bhattacharyya *Do inputs matter?: using data-dependence profiling to evaluate thread level speculation in BG/Q*. Master's thesis, University of Alberta, Fall 2013.

1922, 30 Charles Street West, Toronto, Ontario, Canada, M4Y1R5

☎ +1 (437) 345 7473 • ✉ arnamoy@ualberta.ca

🌐 www.eecg.toronto.edu/~arnamoyb/

COSMIC '13 Arnamoy Bhattacharyya *Automatic Speculative Parallelization of Loops Using Polyhedral Dependence Analysis* In Proceedings of the 2013 International Workshop on Code Optimisation for Multi and Many Cores (co-located with CGO'13)

Awards and Recognition

- Prestigious Rogers Fellowship recipient, University of Toronto, 2015–2019.
- Invited for an all-expenses paid trip to Google Europe PhD Student Summit on Compiler and Programming Technology 2014 in Munich, Germany.
- PACT 2014 Student Travel Grant Recipient.
- PACT 2013 Student Travel Grant Recipient.
- Prestigious Global Research Scholarship, University of Edinburgh, 2013 Recipient.
- Top 5% in Class in all Graduate Courses.
- Best Project in Graduate Level Compiler Course.
- Selected in Persistent Systems as a Software Engineer.(Among the selected 10 from almost 1000 candidates).
- Topper among 60 students in 4 Undergraduate Semesters.
- State Level Rank 25 among 6 hundred thousand students in XIIth standard.
- State Level Rank 10 among 4 hundred thousand students in Xth standard.
- Received Governor's Award for Class X achievement.

Professional Experience

Winter 2016 Teaching Assistant, Operating Systems, Distributed Systems, University of Toronto
Fall 2015 Teaching Assistant, Operating Systems, Parallel Programming, University of Toronto
Spring 2015 Teaching Assistant, Operating Systems and Networks, ETH Zurich
Fall 2014 Teaching Assistant, Design of Parallel and High-Performance Computing, ETH Zurich
Spring 2014 Teaching Assistant, Operating Systems and Networks, ETH Zurich
Fall 2013 Research Assistant, Scalable Parallel Computing Lab, ETH Zurich
Summer 2013 Research Assistant, CDOL, University of Alberta
Winter 2013 Teaching Assistant, CMPUT 379 (Operating Systems)
Fall 2012 Teaching Assistant, CMPUT 379 (Operating Systems)
Summer 2012 Research Assistant, CDOL, University of Alberta
Winter 2012 Teaching Assistant, CMPUT 379 (Operating Systems)
Fall 2011 Teaching Assistant, CMPUT 379 (Operating Systems)

Graduate Coursework

- Computer System & Architecture.
- Parallel and Distributed Systems.
- Resource Allocation in Networks.
- Mining Software Repositories.

1922, 30 Charles Street West, Toronto, Ontario, Canada, M4Y1R5

☎ +1 (437) 345 7473 • ✉ arnamoy@ualberta.ca

🌐 www.eecg.toronto.edu/~arnamoyb/

- Machine Learning in Optimizing Compilers.

Relevant Skills

Languages C, C++, Java, Shell Script, C#, Python
Compilers LLVM, GCC
Simulators SimpleScalar, Omnet++
Tools R, Matlab

References

- José Nelson Amaral (MSc Supervisor)
Professor, University of Alberta, jamaral@ualberta.ca
- Cristiana Amza (PhD Supervisor)
Associate Professor, University of Toronto, amza@ece.utoronto.ca
- Torsten Hoefler (Internship Supervisor)
Assistant Professor, ETH Zurich, htor@inf.ethz.ch

1922, 30 Charles Street West, Toronto, Ontario, Canada, M4Y1R5

☎ +1 (437) 345 7473 • ✉ arnamoy@ualberta.ca

🌐 www.eecg.toronto.edu/~arnamoyb/