

Joana M. F. da Trindade

CONTACT INFORMATION Joana M. F. da Trindade jmf@csail.mit.edu
Cambridge, MA, 02139 <http://jmfrindade.github.io>

RESEARCH INTERESTS Graph data management, distributed data processing systems, systems performance analysis

EDUCATION **Massachusetts Institute of Technology** Fall 2016– present
PhD in Computer Science, CGPA 5.0/5.0
Working with Prof. Sam Madden at MIT’s Database Group, and Prof. Julian Shun at MIT’s Theory of Computation Group.

- Graduate EECS: Database Systems, Distributed Systems, Advances in Computer Vision, Graph Analytics (audited), Introduction to the Theory of Computation
- Minor: Fund. of Music Theory, Digital Music Processing

University of Illinois at Urbana-Champaign
Master of Science in Computer Science, GPA 3.88/4.00
Advisor: Prof. Marianne Winslett

- Thesis: Supporting Dynamic Queries and Annotations Over Data Graphs
- Graduate Coursework: Advanced Database Systems, Advanced Operating Systems, Algorithms, Cloud Computing Infrastructure, Fault-Tolerant Digital Systems Design, Parallel Computer Architecture, Secure Data Management

Universidade Federal do Rio Grande do Sul
Bachelor of Science in Computer Science, GPA 8.0/10.0, and 9.58/10.0 (last 60 hours)
Advisors: Prof. Dr. Dieter Rombach and Dipl.-Inf. Thorsten Keuler

- Final Project (in collaboration with TU Kaiserslautern): Metamodel based Architecture Evaluation of Software Systems

Technische Universitaet Kaiserslautern
Exchange Program, Computer Science Department

- Undergraduate research assistant at Fraunhofer IESE

AWARDS **Microsoft Research PhD Fellowship**, Class of 2019.

EECS Merrill Lynch Graduate Fellowship, MIT, 2016.

Sloan Scholar, Alfred P. Sloan Foundation’s MPhD Program, MIT, 2016.

10 Google Peer Bonuses, 6 Google Kudos Awards, 1 Google Spot Bonus, for technical and professional service contributions. Spot bonus awarded for internal launch of fleet-wide read / write RPC real-time latency analysis of Colossus clients and related storage servers, 2012–2015.

Siebel Scholar, Class of 2011, awarded for academic excellence and demonstrated leadership to top 5 first-year graduate students from the top 7 CS departments in the world.

Overachievement bonus at the end of internship, SAP Research - Security & Trust, France, 2008.

TEACHING & MENTORSHIP

Teaching Assistant

- MIT: TA for *Software Systems for Data Science (6.080)*([github](#)), Fall 2019

Mentoring

- MIT: Mengyuan Sun, Master of Engineering, Fall 2019 and Spring 2020

EXPERIENCE

Intel, Portland, OR (remotely from Boston) Summer 2021
Graduate Intern, Intel Optane Group Systems Pathfinding

- Working with Dr. Sanjeev Trika and Dr. Jawad Khan on using Optane PMEM for temporal graph analytics.

Microsoft Research, New York, NY (remotely from Boston) Summer 2020
Research Intern, Systems Group at MSR NYC

- Worked with Dr. Sid Sen, Dr. Mihir Nanavati and Nathan Taylor at AI for Systems research group.
- Evaluated potential benefits of using hybrid KV-store indexing strategy for Azure Redis (internal customers).
- Extended existing hybrid KV-store indexing approach to incorporate RadixS-pline, an open source state-of-the-art learned index by folks at MIT DSAIL.

Microsoft, Redmond, WA Summer 2017
Research Intern, Cloud and Information Services Lab

- Worked with Dr. Carlo Curino and Dr. Konstantinos Karanasos on query optimization for large-scale provenance graphs.
- Research paper on this work accepted at ICDE 2020; co-authored patent with Microsoft collaborators.

Google Inc, New York, NY and Mountain View, CA (2016) 2012–2016
Software Engineer, Apps and Storage Infrastructure

- 2015–2016: In charge of infrastructure and monitoring tasks on both backend and frontend components for Google Jamboard.
- 2013–2015: First NYC engineer on a Storage Infrastructure team that works to improve performance of Google's largest distributed storage systems, including Bigtable, the new version of GFS (aka Colossus), Blobstore, and Spanner. Aspects analyzed include distributed caching mechanisms, placement policies, and file read / write RPC latency distributions of different storage systems.
- 2012–2013: Integration of Gmail, Photos and Drive storage metadata (featured on [TechCrunch](#), [Google Drive Blog](#) and [many others](#)).
- Techs: C++, MapReduce, Java, Python, JavaScript, R.

Bloomberg LP, New York, NY 2011–2012
Financial Software Developer, Real-time Data Feeds

- Part of group that is in charge of ingesting and normalizing all real-time data that stock exchanges send to Bloomberg. Developed and enhanced a number of real-time low-latency market data feed handlers for North and South American exchanges, including Toronto Stock Exchange and Cantor Fitzgerald.
- Primary and/or secondary on-call for 20+ real-time data feeds.
- Basic financial knowledge in fixed income, commodities, equities and derivatives (options and futures) asset classes.
- Techs: multithreading, distributed systems, C++, FIX/FIXML.

PATENTS

Joana Matos Fonseca da Trindade (Microsoft), Konstantinos Karanasos (Microsoft), and Carlo Aldo Curino (Microsoft), US US20200265049A1, “[Materialized graph views for efficient graph analysis.](#)” Filed February 15th, 2019.

Joana M. Fonseca da Trindade (IBM Research T. J. Watson), Anastasios Kementsietsidis (IBM Research T. J. Watson) and Mudhakar Srivatsa (IBM Research T. J. Watson), US 20120327087, “[Supporting Recursive Dynamic Provenance Annotations Over Data Graphs.](#)” Filed June 27, 2011.

A. Benameur (SAP Labs France), **J. Da Trindade** and P. El-Khoury (SAP Labs France), US 20100162406, “[Security Aspects of SOA.](#)” Filed June 12, 2009.

A. Benameur (SAP Labs France), **J. Da Trindade** and P. El-Khoury (SAP Labs France), Europe EP2133831A1, “[Security Aspects of SOA.](#)” Filed June 12, 2008.

INVITED TALKS “Kaskade: Graph Views for Efficient Graph Analytics”, University of Chicago (hosted by [ChiData Group](#)), May 2020.

“Kaskade: Graph Views for Efficient Graph Analytics”, ICDE 2020, April 2020.

“Kaskade: Graph Views for Efficient Graph Analytics”, Microsoft (hosted by [Gray Systems Lab](#)), April 2020.

“[Graph Views for Efficient Graph Analytics](#)”, Imperial College (hosted by [LSDS Group](#)), April 2018.

PUBLICATIONS **J. M. F. da Trindade**, K. Karanasos, C. Curino, S. Madden and J. Shun, “Kaskade: Graph Views for Efficient Graph Analytics.” *ICDE 2020, Dallas, TX April 2020.*

J. M. F. da Trindade, K. Karanasos, C. Curino, S. Madden and J. Shun, “[Kaskade: Graph Views for Efficient Graph Analytics.](#)” (arXiv 2019 extended pre-print).

M. Vartak, **J. M. F. da Trindade**, M. Zaharia and S. Madden, “[MISTIQUE: A System to Store and Query Model Intermediates for Model Diagnosis.](#)” *SIGMOD 2018, Houston, TX, June 2018.*

A. Ilyas, **J. M. F. da Trindade**, R. C. Fernandez and S. Madden, “[Extracting Syntactic Patterns from Databases.](#)” *ICDE 2018, Paris, France, April 2018.*

M. Yuan, D. Stein, B. Carrasco, **J. M. F. da Trindade** and Y. Lu, “[Partitioning Social Networks for Fast Retrieval of Time-dependent Queries.](#)” *3rd International Workshop on Graph Data Management (GDM, co-located with ICDE), Washington, DC, April 2012. Invited paper.*

B. Carrasco, Y. Lu and **J. M. F. da Trindade**, “[Partitioning Social Networks for Time-dependent Queries.](#)” *4th Workshop on Social Network Systems (SNS, co-located with EuroSys), Salzburg, Austria, April 2011.*

J. M. F. da Trindade, C. Pham and N. Dautenhahn, “[μBeR: A Microkernel Based Rootkit for Android Smartphones.](#)” *IEEE Symposium on Security and Privacy, Oakland, CA, May 2010 (paper) (poster).*

G. Jacques-Silva, R. J. Drebes, J. Gerchman, **J. M. F. Trindade**, T. S. Weber and

I. Jansch-Porto, “A Network-level Distributed Fault Injector for Experimental Validation of Dependable Distributed Systems.” *30th Annual International Computer Software and Applications Conference (COMPSAC 2006)*, pp. 421-428, Chicago, USA, September 17-21, 2006.

J. M. F. Trindade, G. Jacques-Silva, R. J. Drebes, T. S. Weber and I. Jansch-Porto, “Off-line Synchronization of Distributed Logs in Fault Injection Test Campaigns.” *Proceedings of the 7th IEEE Latin-American Test Workshop (LATW 2006)*, pp. 137-142, Buenos Aires, Argentina, March 26-29, 2006.

R. J. Drebes, G. Jacques-Silva, **J. M. F. da Trindade** and T. S. Weber, “A Kernel-based Communication Fault Injector for Dependability Testing of Distributed Systems.” *IBM Verification Conference (IBM verification 2005)*, pp. 177-190, Haifa, Israel, November 13-16, 2005.

M. Rafaelli, **J. M. F. Trindade**, G. Jacques-Silva, T. S. Weber and I. Jansch-Porto, “Fault Scenario Configuration for Experimental Validation of Distributed Applications in FIONA” (extended abstract, in Portuguese) *VI Regional School of High Performance (ERAD 2006)*, pp. 135-138, Ijuí, Brazil, January 10-14, 2006.

SERVICE

Program Committee

- ACM Symposium on Cloud Computing (SoCC 2021)

Outreach

- Panelist for Grad Student Orientation and Virtual Visit Days diversity recruiting events (2020-2022).
- Tour guide for on-campus graduate housing visits during MIT’s open visit days in March 2018.
- On-site recruiter with Google Inc. at Grace Hopper Conference 2015.
- On-campus recruiting for four years in a row at University of Illinois at Urbana-Champaign (with Bloomberg L. P. in 2012, with Google Inc. in 2013, 2014 and 2015).
- Panelist at Google: Robotics tech talk for Girls Who Code, and NYU’s CSAW CyberSecurity Program for Young Women 2014 and 2015.
- Technovation Challenge 2014: Mentor of students from Brooklyn International High School that designed and implemented a clothing donation app.
- Per Scholas program: Teaching assistant for a class led by Raymond Blum (Google) on robotics using Arduino.

OTHER ACTIVITIES

- Member of EECS Graduate Student Group for MIT Visiting Committee (2022).
- CSAIL Postdoc and Graduate Student Committee (CPGSC): PhD student member representing Systems CoR (2020-2021).
- Radio show host at MIT’s WMBR student radio (2016-2018).
- Interests: bass guitar, fantasy and horror comic books, clickety clack mech keeps.

LANGUAGES

Portuguese (native), English, Spanish (basic)