Matheus Stolet

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Interests

Computing: *Distributed systems, privacy, operating systems, security*

Extra Curricular: *Soccer, skiing, video games*

Education

University of British Columbia — M.S.c in Computer Science

September 2019 - May 2021

Supervisors: Dr. Ivan Beschastnikh and Dr. Aline Talhouk

University of British Columbia — BA in Computer Science & Minor in Philosophy

September 2015 - May 2019

Research

SmartCache - 2020 - Present

- A practical approach to save the DP budget across queries by designing a cache that uses and interpolates old results
- Answers a subset of new queries without consuming the DP budget
- Goal is to perform more queries with the same privacy guarantees, while not giving up accuracy

LEAP - 2019 - 2020

- Designed and engineered LEAP, a distributed and federated platform for data analytics that avoids sharing patient-identifiable information and reduces privacy risks
- Utilized differentially private methods to protect sensitive patient information
- Leveraged a distributed architecture that allows users to perform statistical queries and federated learning on multiple nodes

Traviz - 2019 - Present

- Developed Traviz, a new visualization tool that helps developers understand the traces collected from a distributed system
- Designed multiple visualization tools that compared traces, captured the dependencies, and displayed the order of events in a distributed system
- Employed d3.js to build visualizations

Finesse - 2019 - Present

- Collaborated on Finesse, an extension to the FUSE library that improves the performance and extensibility of user space file systems
- Reduced kernel overhead by utilizing a message passing layer between the application and the file system
- Conducted extensive performance benchmarks of user-space file systems

Biscotti - 2019

- Assisted in Biscotti, a P2P multi-party machine learning system that uses blockchain and crypto primitives to coordinate a privacy-preserving ML process
- Profiled the code to encounter bottlenecks

- Parallelized bottlenecks to improve performance
- Implemented a federated averaging algorithm to reduce convergence time of machine learning models
- Implemented compression techniques to reduce communication costs

Employment

UBC, Vancouver — Research Assistant

May 2019 - August 2019

- Developed a data analytics platform to perform distributed queries in hospitals and research centres
- Used differentially private techniques to prevent information leakage from distributed queries
- Presented the work on seminars at UBC and BC Cancer Research Centre

Thrive Health, Vancouver — Software Developer Intern

May 2018 - August 2018

- Developed a program to triage patients before surgery
- Used React and Redux to build webapp frontend
- Developed a media transcoder to convert videos into mp4 and to extract thumbnail from pictures
- Used AWS lambdas and SQS to scale deployment of media transcoder

Teaching

UBC, Vancouver — Graduate Teaching Assistant: Distributed Systems

January 2020 - May 2020

- Helped students with topics such as distributed system design, replication, and failure recovery
- Responded student questions on an online discussion board
- Coordinated grading and assignment ideas with the course team

UBC, Vancouver — Undergraduate Teaching Assistant: Internet Computing

September 2018 - December 2018

- Conducted tutorials on network infrastructure, packet routing, and communication protocols
- Held office hours to help students with assignments and lecture material
- Graded assignments and quizzes

Presentations and Posters

EuroSys Poster Session - 2020

- Presented Finesse at EuroSys virtual poster session

BC Cancer Research Summit - 2019

- Presented LEAP a Large-scale federated and privacy preserving Evaluation & Analysis Platform to healthcare researchers

Awards

2020 - International Student Tuition Award
2019 - International Student Tuition Award
2016 - Dean's List
2016 - Trek Excellence Scholarship
2016 - Faculty of Arts International Student Scholarship