

## Vaastav Anand

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<https://vaastavanand.com/>

EDUCATION	PhD, Computer Science Max Planck Institute for Software-Systems (MPI-SWS), Saarbruecken, Germany	2020-current
	MSc, Computer Science University of British Columbia, Vancouver, Canada Thesis: Dara the explorer : coverage based exploration for model checking of distributed systems in Go	2018-2020
	BSc, Computer Science University of British Columbia, Vancouver, Canada	2013-2018
Employment	Research Intern, MPI-SWS	2019
	<ul style="list-style-type: none"><li>Instrumented DeathStarBench applications with XTrace tracing for large-scale experiments for Sifter.</li></ul>	
	Undergraduate Research Assistant University of British Columbia, Under Ivan Beschastnikh	2018
	<ul style="list-style-type: none"><li>Designed and developed Dara, a tool for model checking distributed systems.</li></ul>	
	Software Engineering Intern NVIDIA - MODS (Modular Diagnostics) Team	2017
	<ul style="list-style-type: none"><li>Implemented memory repair sequences for faulty High Bandwidth Memory (HBM).</li><li>Designed, developed and implemented a CUDA based full memory stress test.</li></ul>	
Publications	Software Engineering Intern NVIDIA - MODS (Modular Diagnostics) Team	2016
	<ul style="list-style-type: none"><li>Implemented a synchronization option for CUDA based linpack tests to synchronize CUDA kernel launches within 30us across multiple GPUs.</li></ul>	
	Software Developer Intern Thinkbox Software - Sequoia Team	2015-2016
	<ul style="list-style-type: none"><li>Designed, developed and implemented the 3D PDF export option in Sequoia.</li></ul>	
	<b>Papers</b>	
	Vaastav Anand, Antoine Kaufmann, Deepak Garg, Jonathan Mace. <i>Millenial: A Toolchain for Highly Reconfigurable Microservice Applications</i> . Under Review.	
	Lei Zhang, Zhiqiang Xie, Vaastav Anand, Ymir Vigfusson, Jonathan Mace. <i>The Benefit of Hindsight: Tracing Edge Cases in Distributed Systems</i> . To appear in <i>Networked Systems Design and Implementation, NSDI 2023</i>	
	Vaastav Anand, Zhiqiang Xie, Matheus Stolet, Roberta De Viti, Thomas Davidson, Reyhaneh Karimipour, Safya Alzayat, Jonathan Mace. <i>The Odd One Out: Energy is not like Other Metrics</i> . In <i>HotCarbon 2022</i>	
	Vaastav Anand*, Puneet Mehrotra*, Daniel Margo*, Margo Seltzer. <i>Smooth Kronecker: Solving the Combing Problem in Kronecker Graphs</i> . In <i>Joint Workshop on</i>	

*Graph Data Management Experiences and Systems (GRADES) and Network Data Analytics (NDA) 2020*

Vaastav Anand, Matheus Stolet, Thomas Davidson, Ivan Beschastnikh, Tamara Munzner, and Jonathan Mace. Aggregate-driven trace visualizations for performance debugging. *arXiv 2020*

Pedro Las-Casas, Giorgi Papakerashvili, Vaastav Anand, Jonathan Mace. Sifter: Scalable Sampling for Distributed Traces, without Feature Engineering. *Symposium on Cloud Computing 2019*

## Posters

Vaastav Anand, Antoine Kaufmann, Deepak Garg, Jonathan Mace. Millenial: Modular Microservice Macrobenchmarks. At *Operating Systems Design and Implementation, OSDI 2022*

Vaastav Anand. Millenial: Modular Microservice Macrobenchmarks. At *Eurosys Doctoral Workshop, EuroDW 2021*

## Datasets

Vaastav Anand. Fantasy Premier League Gameweek-By-Gameweek Dataset. <https://github.com/vaastav/Fantasy-Premier-League>

Vaastav Anand and Jonathan Mace. X-Trace trace dataset for DeathStarBench. [https://gitlab.mpi-sws.org/cld/trace-datasets/deathstarbench\\_traces](https://gitlab.mpi-sws.org/cld/trace-datasets/deathstarbench_traces)

## Student Research Competitions

Vaastav Anand. Millenial: Modular Microservice Macrobenchmarks. At *Symposium on Operating Systems Principles, SOSP 2021*

Vaastav Anand. Dara: Hybrid Model Checking of Distributed Systems. At *The ACM Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering, ESEC/FSE 2018, Lake Buena Vista, Florida, USA*.

Teaching	Teaching Assistant, Saarland University	2021
	• 1 semester TA for Distributed Systems Core Course	2021
	Graduate Teaching Assistant	2018-2020
	University of British Columbia, Department of Computer Science	
	• 1 semester TA for Computer Hardware and Operating Systems (CPSC 313)	2020
	• 1 semester TA for Graduate Operating Systems (CPSC 508)	2019
	• 1 semester TA for Distributed Systems (CPSC 416)	2018
	Academic Assistant	2018
	Vancouver Summer Program	
	• Teaching Assistant for the Algorithms and the World Wide Web course.	
	Undergraduate Teaching Assistant	2014-2018
	University of British Columbia, Department of Computer Science	
	• 1 semester TA for Introduction to Software Engineering (CPSC 210)	2018

	<ul style="list-style-type: none"> <li>• 1 semester TA for Advanced Operating Systems (CPSC 415) 2017</li> <li>• 1 semester TA for Intermediate Algorithm Design and Analysis (CPSC 320) 2017</li> <li>• 1 semester TA for Computer Hardware and Operating Systems (CPSC 313) 2016</li> <li>• 1 semester TA for Introduction to Computer Systems (CPSC 213) 2015</li> <li>• 3 semesters TA for Models of Computation (CPSC 121) 2014-2015</li> </ul>
<b>Awards</b>	<i>SoCC Student Scholarship</i> 2019 <i>2nd Place, FSE'18 SRC</i> 2018 <i>SIGSOFT CAPS Award</i> 2018 <i>UBC International Tuition Award</i> 2018-2019 <i>Work Learn International Undergraduate Research Award</i> 2018 <i>UBC Faculty of Science, International Student Award</i> 2015, 2018 <i>ACM ICPC PacNW Regional Contest Division 2 Champion</i> 2017 <i>UBC Trek Excellence Scholarship</i> 2016-17, 2017-2018 <i>UBC Dean's Honor List</i> 2014, 2015, 2017 <i>UBC Computer Science Student Service Award</i> 2015 <i>GIIS Global Citizen Scholarship</i> 2011-2013
<b>Service</b>	<i>Academic Service</i> <ul style="list-style-type: none"> <li>• Program Committee Member <ul style="list-style-type: none"> <li>– CS-Can Student Symposium 2019</li> </ul> </li> <li>• Organization Committee Member <ul style="list-style-type: none"> <li>– The Cornell, Maryland, Max Planck Pre-doctoral Research School (CMMRS) 2022</li> </ul> </li> <li>• Publicity Chair <ul style="list-style-type: none"> <li>– The Journal of Systems Research 2022-2023.</li> </ul> </li> <li>• Systems Trivia Co-Organizer <ul style="list-style-type: none"> <li>– HotOS 2021</li> <li>– OSDI 2021</li> </ul> </li> <li>• Sub-Reviewer for Prof. Ivan Beschastnikh <ul style="list-style-type: none"> <li>– ESEM 2018, ESEC/FSE NIER 2018, Elseiver IST 2019</li> </ul> </li> <li>• Sub-Reviewer for William Anthony Mason <ul style="list-style-type: none"> <li>– SIGCSE 2019</li> </ul> </li> </ul>
<b>Skills</b>	<i>Programming Languages:</i> C++, Go, Python, C, Bash, JavaScript, Java, CUDA <i>Tools:</i> IntelliJ, GDB, Eclipse, Visual Studio, Git, Perforce, Vim, L <sup>A</sup> T <sub>E</sub> X
<b>Selected Non-Research Projects</b>	<i>Distributed Clocks</i> 2018-2020 Inter-operable vector clock logging library <ul style="list-style-type: none"> <li>• Distributed clocks implements vector clocks in Go, Java, C++ and C</li> <li>• <a href="https://github.com/DistributedClocks">https://github.com/DistributedClocks</a></li> </ul> <i>eTone</i> 2017-2018

- A tone matching game created to measure the brain myelination in people while learning tonal languages.
- Member of the Language Sciences Initiative Communicating Mind and Body Working Group.

**Interests**

*Computing:* Distributed Systems, Operating Systems, Software Engineering

*Extra Curricular:* Soccer, Languages, Cricket.