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EDUCATION

Doctor of Philosophy in Computer Science **Dec 2016**
Stanford University
Dissertation title: Realm: Performance Portability through Composable Asynchrony
Advisor: Alex Aiken

Master of Science in Computer Science **June 1999**
Stanford University

Bachelor of Science in Computer Science and Electrical Engineering **June 1999**
Stanford University

PROFESSIONAL EXPERIENCE

NVIDIA Corporation, Santa Clara, CA **1998 – present**
Principal Research Scientist 2010 – present
Director of ASIC Design 2004 – 2010
ASIC Design Manager 2001 – 2004
ASIC Design Engineer 1998 – 2001

PEER-REVIEWED PUBLICATIONS

1. **Sean Treichler**, Michael Bauer, Rahul Sharma, Elliott Slaughter, and Alex Aiken. Dependent partitioning. In *Proceedings of the 2016 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications*, pp. 344–358. ACM, 2016.
2. Elliott Slaughter, Wonchan Lee, **Sean Treichler**, Michael Bauer, and Alex Aiken. Regent: A high-productivity programming language for HPC with logical regions. In *Proceedings of the International Conference on High Performance Computing, Networking, Storage and Analysis*, p. 81. ACM, 2015.
3. Michael Bauer, **Sean Treichler**, Elliott Slaughter, and Alex Aiken. Structure slicing: Extending logical regions with fields. In *Proceedings of the International Conference on High Performance Computing, Networking, Storage and Analysis*, pp. 845–856. IEEE Press, 2014.
4. **Sean Treichler**, Michael Bauer, and Alex Aiken. Realm: An event-based low-level runtime for distributed memory architectures. In *Proceedings of the 23rd International Conference on Parallel Architectures and Compilation Techniques*, pp. 263–276. ACM, 2014.
5. Michael Bauer, **Sean Treichler**, and Alex Aiken. Singe: leveraging warp specialization for high performance on GPUs. In *Proceedings of the Symposium on Principles and Practice of Parallel Programming (ACM SIGPLAN Notices)*, vol. 49, no. 8, pp. 119–130. ACM, 2014.
6. **Sean Treichler**, Michael Bauer, and Alex Aiken. Language support for dynamic, hierarchical data partitioning. In *Proceedings of the International Conference on Object-Oriented*

Programming, Systems, Languages, and Applications(ACM SIGPLAN Notices), vol. 48, no. 10, pp. 495–514. ACM, 2013.

7. Michael Bauer, **Sean Treichler**, Elliott Slaughter, and Alex Aiken. Legion: expressing locality and independence with logical regions. In *Proceedings of the International Conference on High Performance Computing, Networking, Storage and Analysis*, p. 66. IEEE Computer Society Press, 2012.
8. Mike Showerman, Jeremy Enos, Craig Steffen, **Sean Treichler**, William Gropp, and Wenmei W. Hwu. EcoG: A power-efficient GPU cluster architecture for scientific computing. *Computing in Science & Engineering* 13, no. 2 (2011): 83–87.

SELECTED PATENTS

1. Khailany, Brucek; **Treichler, Sean**. 2015. System, method, and computer program product for copying data between memory locations. U.S. Patent 9,164,690, filed July 27, 2012, and issued October 20, 2015.
2. **Treichler, Sean** et al.. 2015. Consolidated crossbar that supports a multitude of traffic types. U.S. Patent 9,098,383, filed June 2, 2010, and issued August 4, 2015.
3. **Treichler, Sean**; Shah, Lacky; Wexler, Daniel. 2015. Method for handling state transitions in a network of virtual processing nodes. U.S. Patent 8,976,185, filed November 11, 2011, and issued March 10, 2015.
4. Shah, Lacky; **Treichler, Sean**; de Waal, Abraham. 2015. System and method for using domains to identify dependent and independent operations. U.S. Patent 8,948,167, filed September 15, 2011, and issued February 3, 2015.
5. Kilgariff, Emmett; Molnar, Steven; **Treichler, Sean**; et al.. 2014. Hardware-managed virtual buffers using a shared memory for load distribution. U.S. Patent 8,760,460, filed May 4, 2010, and issued June 24, 2014.
6. **Treichler, Sean**; Wagner, Barry. 2013. Memory device synchronization. U.S. Patent 8,495,327, filed June 4, 2010, and issued July 23, 2013.
7. Danskin, John; Kilgariff, Emmett; Glasco, David; **Treichler, Sean**. 2012. Interprocessor direct cache writes. U.S. Patent 8,327,071, filed 2007, and issued December 4, 2012.
8. Case, Colyn; Vyshetsky, Dmitry; **Treichler, Sean**. 2008. Multi-client virtual address translation system with translation units of variable-range size . U.S. Patent 7,334,108, filed January 30, 2004, and issued February 19, 2008.
9. Simeral, Brad; **Treichler, Sean**; Reed, David. 2007. System, apparatus and method for avoiding page conflicts by characterizing addresses in parallel with translations of memory addresses. U.S. Patent 7,275,143, filed December 13, 2004, and issued September 25, 2007.
10. **Treichler, Sean**; Liu, Edward. 2004. Computer system with source-synchronous digital link. U.S. Patent 6,779,069, filed September 4, 2002, and issued August 17, 2004.
11. Van Dyke, James; Foskett, Nicholas; Simeral, Brad; **Treichler, Sean**. 2003. High bandwidth-low latency memory controller. U.S. Patent 6,647,456, filed February 23, 2001, and issued November 11, 2003.

(40 additional patents available upon request)