Samuel J. Kaufman

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EDUCATION

Ph.D., Computer Science & Engineering *in progress*
Advisors: Rastislav Bodik & René Just
University of Washington, Seattle

M.S., Computer Science & Engineering
March 2020
University of Washington, Seattle

B.S. in Informatics *emphasis in Human-Computer Interaction*
September 2006 — June 2010
Honors Thesis: "Automatic programming with reuse-informed search"
University of California, Irvine

HONORS & AWARDS

- Wissner-Slivka Endowed Fellowship, 2010.
- ARCS Fellowship, 2010.
- UW Computer Science & Engineering First-Year Fellowship, 2010–2011.

- Phi Beta Kappa, member since April 2009.
- Chancellor's Award for Excellence in Undergraduate Research, 2008.
- Women in Information and Computer Sciences' Gateway to Your Future Award, 2007.

PUBLICATIONS

S. J. Kaufman, P. M. Phothilimthana, Y. Zhou, C. Mendis, S. Roy, A. Sabne and M. Burrows. "A learned performance model for Tensor Processing Units." MLSys 2021. 15 March 2021.

G. Fedyukovich, S. J. Kaufman and R. Bodik. "Learning inductive invariants by sampling from frequency distributions." *Formal Methods in System Design*, vol. 56, issue 1–3, pp. 154–177. November 2020.

S. J. Kaufman, P. M. Phothilimthana and M. Burrows. "Learned TPU cost model for XLA tensor programs." ML for Systems workshop, NeurIPS 2019. Vancouver, BC, Canada.

P. M. Phothilimthana, A. S. Elliot, A. Wang, A. Jangda, B. Hagedorn, H. Barthels, S. J. Kaufman, V. Grover, E. Torlak and R. Bodik. "Swizzle inventor: data movement synthesis for GPU kernels." ASPLOS 2019. Providence, RI, USA.

G. Fedyukovich, S. J. Kaufman and R. Bodik. "Sampling invariants from frequency distributions." FMCAD 2017. Vienna, Austria. October 2017.

S. J. Kaufman and M. S. Silberman. "Rebound effects in sustainable HCI." CHI: 2011; Everyday Practice and Sustainable HCI Workshop. Vancouver, BC. May 2011.

S. J. Kaufman and J. Chen. "Where we twitter." CHI 2010; Microblogging Workshop. Atlanta, Georgia. April 2010.

G. Marcu, S. J. Kaufman, J. K. Lee, R. W. Black, P. Dourish, G. R. Hayes and D. J. Richardson. "Design and evaluation of a computer science and engineering course for middle school girls." SIGCSE 2010. Milwaukee, WI. March 2010.

D. J. Patterson, X. Ding, S. J. Kaufman, K. Liu and A. Zaldivar. "An ecosystem for learning and using sensor-driven status messages." *IEEE Pervasive Computing*, vol. 8, no. 4, pp. 42–49. October–December, 2009.

D. J. Patterson, C. Baker, X. Ding, S. J. Kaufman, K. Liu and A. Zaldivar. "Online everywhere: evolving mobile instant messaging practices." UbiComp 2008. Seoul, South Korea. September 2008.

G. R. Hayes, D. J. Patterson, M. Monibi and S. J. Kaufman. "Interactive and intelligent visual communication systems." Workshop short paper. In the *proceedings of the 7th international conference on interaction design and children*. Chicago, IL. June 2008.

PRESENTATIONS

S. J. Kaufman. "Nomatic*IM." Talk. U.C. Irvine Undergraduate Research Symposium. Irvine, CA. May 2008.

S. J. Kaufman, D. J. Patterson and G. R. Hayes. "Design of interactive visual scheduling systems." Abstract/poster. International Meeting for Autism Research. London, UK. May 2008.

S. J. Kaufman. "Nomatic*IM for presence." Talk. U.C. Irvine Undergraduate Research Symposium. Irvine, CA. August 2007.

N. Noack, S. J. Kaufman and D. J. Patterson. "Nomatic*IM: context-aware instant messaging." Poster. Pervasive 2007, the 5th International Conference on Pervasive Computing. Toronto, ON, CA. May 2007.

EXPERIENCE

Research Intern, Google Brain — Summer 2019 (ongoing)
Develop a machine learning-based cost model and other improvements to a new autotuner for XLA tensor programs targeting Google's Tensor Processing Unit.

Co-Founder Gradient — 2013–2017
Work with clients to design and build digital products, especially for mobile devices and data-heavy domains. Hire engineers, designers, and sales staff, both internally and for client teams. Develop sales, product, and content strategies.

Coursera, Instructor — 2016
Develop materials and lectures for the flagship Coursera iOS Objective-C programming course.

Co-Founder, Assetmap — 2011–2012
Develop product strategy and technical infrastructure for product prototyping, hire initial team, and execute user research. Build and deploy online recommender system for skills-based partnering among groups of non-profit organizations.

Developer, Quub — 2009–2010
Develop mobile application, production machine learning system ingesting device sensor data, and Session Initiation Protocol (SIP) infrastructure. Quub was a technology startup based in Irvine, CA.

Undergraduate Researcher — January 2007–March 2009
Prof. Donald J. Patterson, Department of Informatics, U.C. Irvine
Develop Nomatic*IM, including various machine learning algorithms. Nomatic*IM is a system for learning social context descriptions from mobile device sensors to support instant messenger presence negotiation, and for linking geographic positions to aggregate place descriptions.

Undergraduate Researcher — December 2007–April 2008
Prof. Gillian R. Hayes, Department of Informatics, U.C. Irvine
Develop intelligent visual schedule system for special education classrooms.