BRETT SAIKI

Graduate Student \sim Research Assistant

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SUMMARY			
Graduate student doing research in prog puter number systems, and term rewriti floating-point in both software and hard	gramming languages, com- ng; obsessed with all things ware.	Languages: Interests:	C, C++, Racket, Rust, Java, Python Programming Languages, Floating- point, Numerics, Verification
EDUCATION			
University of Washington <i>Paul G. Allen</i> M.S. Computer Science and Engineering	School of Computer Science a	nd Engineering	Sep. 2023 — Present Seattle, WA
University of Washington Paul G. Allen B.S. Computer Engineering, B.A. Mathem	School of Computer Science a natics	nd Engineering	Aug. 2019 — Jun. 2023 Seattle, WA
EXPERIENCE			
 University of Washington Seattle, WA Research Assistant developing tools and libraries for float collaborating with undergraduate study 	ting-point accuracy optimization dents, graduate students, and	on and term rew professors	Sep. 2023 — Present rriting
Intel Corporation Folsom, CA			Jun. 2023 — Sep. 2023
 developed compilers for translating n alization tools for simulating numerica improved high-level graphics hardwa 	numerical specifications, librari al algorithms re algorithms	es for formally \	verifying hardware designs, and visu-
University of Washington Seattle, WA			Sep. 2022 — Jun. 2023
 Undergraduate Research Assistant developed tools and libraries for float collaborated with graduate students, 	ing-point accuracy optimizatic professors, and industrial grou	on and term rew Ips	Dec. 2019 — Jun. 2022 riting
University Enterprises Inc. Santa Ana, Contracted by State Compensation Insura Summer Intern • learned lifecycle of a worker's compe • indexed digital documents, digitized p	CA ance Fund (SCIF) nsation insurance claim physical claims, contacted med	dical providers f	Jun. 2019 — Aug. 2019 or work status updates
PUBLICATIONS			
Equality Saturation Theory Exploration <i>Object-Oriented Programming, Systems, I</i> Anjali Pal, Brett Saiki, Ryan Tjoa, Cynthia Rich	a à la Carte L <i>anguages and Applications (O</i> ey, Amy Zhu, Oliver Flatt, Max Will	OPSLA) 2023 .sey, Zachary Tatlo	ock, Chandrakana Nandi
Odyssey: An Interactive Workbench for ACM Symposium on User Interface Softw Edward Misback, Caleb C. Chan, Brett Saiki, E	r Expert-Driven Floating-Poin are and Technology (UIST) 202. Junice Jun, Zachary Tatlock, Pavel	t Expression Re 3 Panchekha	writing
Rewrite Rule Inference Using Equality Object-Oriented Programming, Systems, I Chandrakana Nandi, Max Willsey, Amy Zhu, B	Saturation <i>Distinguished Pape</i> Languages and Applications (O Brett Saiki, Yisu Wang, Adam Ande	er Award OPSLA) 2021 erson, Adriana Sch	ulz, Dan Grossman, Zachary Tatlock
Combining Precision Tuning and Rewri IEEE International Symposium on Compu Brett Saiki, Oliver Flatt, Chandrakana Nandi, F	ting <i>ter Arithmetic (ARITH) 2021</i> Pavel Panchekha, Zachary Tatlock		
RESEARCH			
FPBench Project FPCore tools, compilers, benchmarks <i>NSV 2016</i>	Herbie Project Floating-point accuracy impre PLDI 2015, ARITH 2021, UIST 2	over Rew 2023 satur 00P	r Project rite rule synthesizer for equality- ration applications SLA 2021, OOPSLA 2023
PROJECTS			
Minim Project Scheme interpreter written in C	mpmfnum Project Docs Number systems library in R	ge ust Alt sul	neric-flonum Project Docs ernate MPFR interface in Racket with bnormalization and exponent bounds