Kalev Alpernas

kalev.alp@gmail.com

http://kalevalp.github.io http://twitter.com/kalevalp

Education

2016–2021 (planned)	**Ph.D. Candidate in Computer Science, Tel Aviv University, Tel Aviv, Israel.** Advisor: Prof. Mooly Sagiv
2014–2016	**M.Sc. in Computer Science, Tel Aviv University, Tel Aviv, Israel.** GPA: 94. Advisors: Prof. Mooly Sagiv and Dr. Sharon Shoham Thesis: Safety Verification of Stateful Networks
2007–2011	**B.Sc. in Computer Science, Tel Aviv University, Tel Aviv, Israel.** GPA: 88.

Publications

2021	Cloud-Scale Runtime Verification of Serverless Applications. **Alpernas K.**, Panda A., Ryzhyk L., and Sagiv M. Accepted for publication in the *ACM Symposium on Cloud Computing* (SoCC), November 2021.
2020	The wonderful wizard of LoC: paying attention to the man behind the curtain of lines-of-code metrics. **Alpernas K.**, Feldman Y., and Peleg H. *International Symposium on New Ideas, New Paradigms, and Reflections on Programming and Software* (Onward!), November 2020.
2019	Some Complexity Results for Stateful Network Verification. **Alpernas K.**, Panda A., Rabinovich A., Sagiv M., Shenker S., Shoham S., and Velner Y. *Formal Methods in System Design* (FMSD), Volume 54, November 2019.
2018	Secure Serverless Computing Using Dynamic Information Flow Control. **Alpernas K.**, Flanagan C., Fouladi S., Ryzhyk L., Sagiv M., Schmitz T., Winstein K. *Object-Oriented Programming, Systems, Languages and Applications* (OOPSLA), November 2018. Abstract Interpretation of Stateful Networks. **Alpernas K.**, Manevich R., Panda A., Sagiv M., Shenker S., Velner Y., and Shoham S. *Static Analysis Symposium* (SAS), August 2018.
2016	Some Complexity Results for Stateful Network Verification. Velner Y., **Alpernas K.**, Panda A., Rabinovich A., Sagiv M., Shenker S., and Shoham S. *Tools and Algorithms for the Construction and Analysis of Systems* (TACAS), April 2016.

Invited Talks

2020	Correct and Secure Serverless Computing. *Presented at the Languages, Systems, and Data Seminar, UCSC*.
2017	Modular Safety Verification for Stateful Networks. *Presented at the Israeli Networking Day*. Modular Safety Verification for Stateful Networks. *Presented at the Communications Systems Engineering seminar, BGU*.
2016	Some Complexity Results for Stateful Network Verification. *Presented at the Verification Day, TAU*.

Teaching

Tel Aviv University, Teaching Assistant

Fall 2019	Techniques for Improving Software Productivity.
Fall 2016	Techniques for Improving Software Productivity.
Fall 2016	Computer Science Learning in the Community.

Professional Experience

VMware Research

2018	**Research Intern** Researched distributed run-time monitoring of cloud-native and serverless applications. Developed the Watchtower runtime monitoring project.
2017	**Research Intern** Researched applications of information flow control to serverless platforms. Developed the Trapeze IFC project.

Cadence Design Systems Inc.

2014-2016	**Lead Software Engineer** Perspec GUI Team Sole developer on the team, in charge of all GUI aspects of an SoC and Firmware verification platform.
2012-2014	**Lead Software Engineer** Incisive Debug Analyzer Debugger GUI Team Worked on the development of a post-process HVL and HDL debugger. In charge of developing the debugger GUI, particularly aspects of multi-language and multi-domain integration.
2010-2012	**Software Engineer** IntlliGen Constraint Solver Team Worked on the development of a constrained pseudo-random generator and constraint solver. In charge of developing a constraint-solver and generation debugger, and developing the compiler subsystem.
2009-2010	**Product Validation Engineer** IntlliGen Constraint Solver Team Developed automated testing systems for validating the correctness of a constrained pseudo-random generator and constraint solver.

Service

External Reviewer	FMCAD'16, POPL'17, CAV'18, VMCAI'19, POPL'20.

Patents

2017	US 9,792,402 Method and system for debugging a system on chip under test.
2016	US 9,244,814 Enriched Log Viewer.
2015	US 9,189,743 System, Method, and Computer Program Product for Constraint Solving.