Josh Kunz

Systems Engineer

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Work

Research Assistant Flux Research Group 2014-present

I work independently and with other graduate students to do research on network systems. I help design and implement the systems, write publication-quality technical papers, and guide the direction of the research. I also try to stay up to date on the latest research in my area by reading technical papers. While working here I've worked on a number of systems for performing automated network management and control, as well as a system designed to increase the flexibility and security of cloud infrastructure.

Education

Bachelors of Computer Science University of Utah Expected 2017
(requirements completed)

3.69 GPA. I was invited to join a graduate research lab as an undergraduate where I worked on automated network management and control. I helped design and build a secure control architecture for open access networks using modern network control technologies like OpenFlow.

Masters of Computer Science University of Utah Expected 2017

My masters degree course of study is focused on increasing the flexibility of inter-tenant interactions in a cloud infrastructure while maintaining strict isolation (specifically, using an object capability system). I've taken courses in distributed systems engineering, and artificial intelligence.

Awards

Outstanding Undergraduate Student Researcher College of Engineering, University of Utah 2015

One of only 17 students to win the award. I was nominated by the professor I had worked with over the previous year. The award was for my research conducted on automated network management systems for open access networks.

Publications

OpenEdge: A Dynamic and Secure Open Service Edge Network IEEE NOMS 2016

I was the first author, and primary researcher on this project. Myself and a PhD student cooperated to design and build the OpenEdge system. I also helped to deploy the system in the test network of an actual regional access network. I presented this paper at the IEEE NOMS 2016 conference.

KnowNet: Towards a Knowledge Plane for Enterprise Network Management IEEE NOMS 2016

For this project I built a knowledge graph from scratch with a novel streaming response interface that would yield new query results as the graph was updated. I also presented this paper at the IEEE NOMS 2016 conference.

Interests

Distributed systems, networking systems, operating systems, AI and machine learning, functional programming, as well as systems more generally.

Skills

Experienced. Python (9 years), C (4 years), OpenFlow (and most of the networking stack), Linux (6 years), git (4 years, use `rebase -i`)

Somewhat Experienced. Haskell, OCaml, Go, Distributed Consensus (implemented Paxos), Racket, Rust, Bash, C++, Java, Javascript, Web Development