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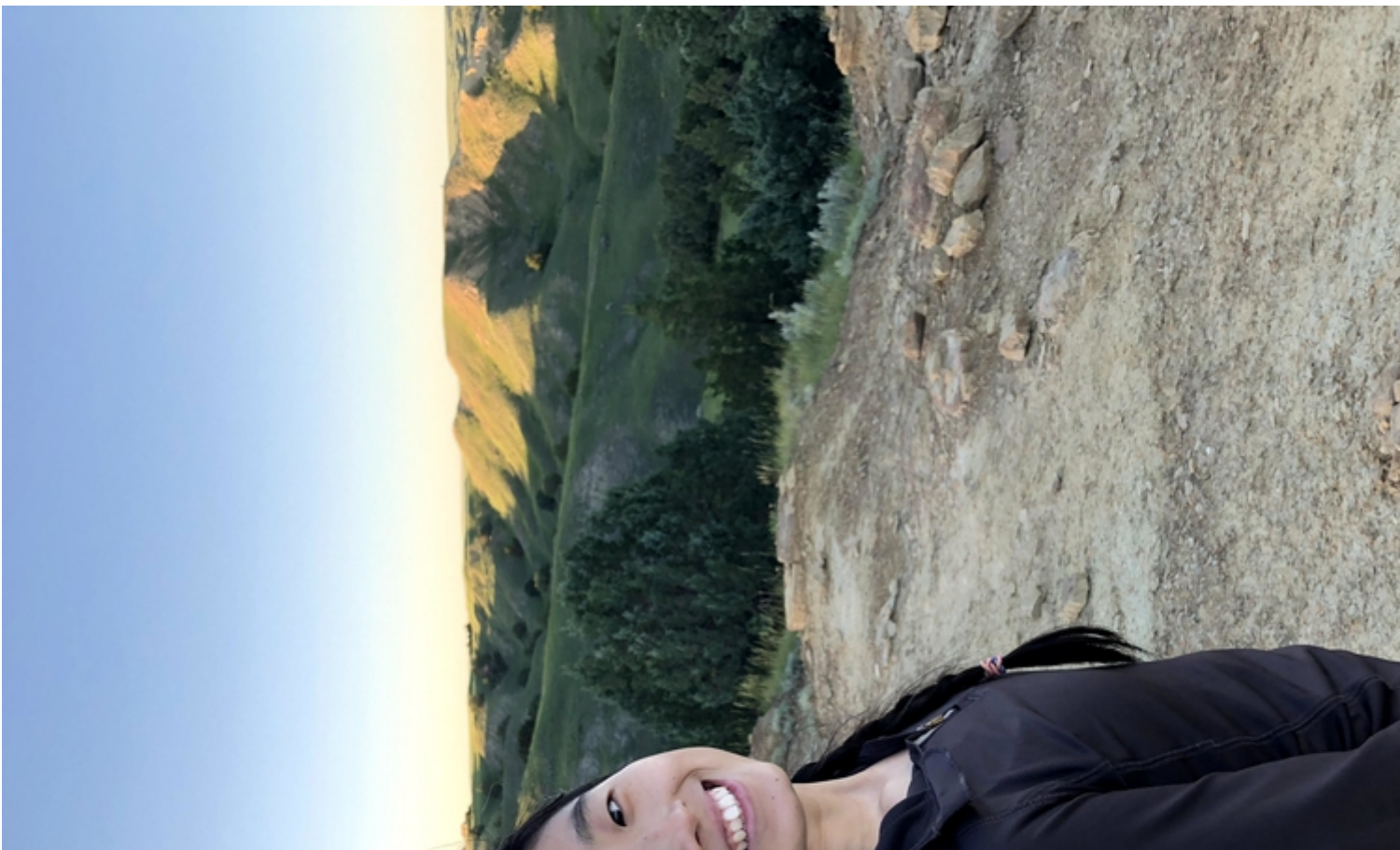
## SORS/WomenInBSC: Beehive: A Modular, Flexible Hardware Network Stack for Direct-Attached Accelerators

### Objectives

[Download the slides here.](#)

**Abstract:** Accelerators have become increasingly popular in datacenters due to their energy and performance benefits. Direct-attached accelerators, where the network stack is implemented in hardware and network traffic bypasses the CPU, can further enhance these benefits. However, interoperating with modern systems deployed in datacenters requires a number customized network functions and protocols provided in software network stacks. Hardware network stacks currently do not support this type of functionality and are difficult to extend due to their fixed processing pipelines.

We propose Beehive, a network-on-chip based network stack for direct-attached accelerators designed to enable flexible construction of complex hardware network stacks. We leverage the NoC-based architecture to flexibly stream network traffic through protocols and services for processing as well as provide scalable application and control plane interfaces.



Katie Lim is a 6th year PhD student in Computer Science & Engineering at the University of Washington advised by Professor Tom Anderson. Her research interests are at the intersection of Computer Architecture and Computer Systems. She regularly contributes to open-source hardware projects. Katie received her BSE degree from Princeton University. She was a recipient of the NSF GRFP fellowship.

## Speakers

**Speaker:** Katie Lim, 6th year PhD student in Computer Science & Engineering at the University of Washington advised by Professor Tom Anderson.

**Host:** Miquel Moreto, High Performance Domain-Specific Architectures Associated Researcher, CS, BSC.

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