

# OOKAMI PROJECT APPLICATION

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**Date:** November 18th, 2022

**Project Title:** Generation of Efficient Code for Vector-Length Agnostic Architecture via Active Lane Consolidation

**Usage:** Testbed

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**Usage Description:**

Conduct experiments to evaluate the efficiency and effectiveness of a compiler generated implementation of Active Lane Consolidation (ALC). The experiments will consist of executing programs with Arm SVE instructions written by hand, generated by production compilers (e.g. GCC and Clang/LLVM), and by modified versions of such compilers. The results will be part of paper publications as well as Rouzbeh's master thesis.

**Computational Resources:**

- Total node hours per year: 3000
- Size (nodes) and duration (hours) for a typical batch job: 1 node, 1-2 hours
- Disk space (home, project, scratch): 50GB for home, 80GB for project, and 30 GB for scratch.

**Personnel Resources (assistance in porting/tuning, or training for your users): None**

**Required software:**

- GNU/Linux OS (e.g. Ubuntu LTS);
- GNU C/C++ compilers (gcc/g++);
- Fujitsu compiler
- Python3 and its development packages;
- Tools to configure/build programs (e.g. build-essential, cmake, make);  
and
- Profiling tools (e.g. perf, gperftools).

**If your research is supported by US federal agencies: N/A**