

Software Packages

Group GitHub: <https://crpl.cis.udel.edu/github/>

- **OpenMP Validation & Verification Testsuite** - This project creates functional test codes for OpenMP offloading features (Version 4.0 and onwards). The test codes are tested against more than several versions of C/C++ and Fortran compilers including LLVM, GNU, ICC, XLC, Clang and Clang AWOMP on various systems including Summit in the US and the supercomputer in Pawsey Supercomputing Center in Australia, cluster in RWTH Aachen in Germany among others.
Project Period: 2017 - present
URL: <https://crpl.cis.udel.edu/ompvvsollve/>
- **OpenACC Validation & Verification Testsuite** - This project creates functional, orphan and cross test codes for OpenACC programming model (Version 1.0 and till the latest version 3.0). The test codes are tested against PGI and GNU compilers on various systems including Summit in the US and PizDaint in Switzerland.
Project Period: 2016 - present
URL: <https://github.com/OpenACCUserGroup/OpenACCV-V>
- **Abstractions for Easy Portability** - This project is work in progress with a goal to create abstractions to break down applications into tasks, create task graphs and create a balanced workload between fine and coarse-grained tasks.
Project Period: 2019 - present
URL: <https://github.com/fabianmcg/wave-dag>
- **Predictive Modeling for SCD synthetic dataset** - This repository contains code and workflow in order to build predictive models out of synthetic dataset created for Sickle Cell disease for classification of patient cohorts.
Project Period: 2017 - present
URL: 0
- **Minisweep** - This repository contains the OpenACC port for the mini-application Minisweep. This is a nuclear physics code of radiation transport algorithm. The goal of this project is to develop a performance yet portable minisweep software to be used for acceptance testing of large scale systems like Summit. This code has also been integrated into the on-going sPEC HPG HPC2020 benchmarking effort.
Project Period: 2017 - 2019
URL: <https://github.com/UD-CRPL/minisweep>
- **Accelerating PPM_One** - Development of an accelerated version of the prediction of chemical shift of protein structures on GPUs using OpenACC on GPUs. This is the first directive-based version of the software that is available.
Project Period: 2017-2020
URL: https://github.com/UD-CRPL/ppm_one
- **High-Level Graph Analytics using MapReduce** - This repository contains software developed using a portable, high-level framework using a popular MapReduce framework, Apache Spark, in conjunction with CUDA and OpenCL to take advantage of automatic data distribution and specialized hardware distributed across systems.
Project Period: 2016-2017 URL: <https://github.com/UD-CRPL/WACCPD-2016>

- **Translation of OpenMP to OpenACC 2.5** - This repository contains experimental results using NAS parallel benchmark and SHOC codes to demonstrate the translation and its impact from OpenMP model to OpenACC. Project Period: 2016-2017
URL: <https://github.com/UD-CRPL/ASHES-17>