University of Arkansas
Department of Computer Science & Computer Engineering
CSCE4643/5693 – GPU Programming

# Programming Assignment 9: Radix Sorting

Due Date: November 17 (Friday) at midnight 11:59 pm
Required for ALL students.

## 1. Objective

The objective of this programming assignment is to get you familiar with parallel radix sorting on GPU.

## 2. Procedure

**Step 1:** Download the programming assignment 9 materials from blackboard to your home folder at Karpenski cluster. Unzip it.

```
unzip p9_radix-sorting_assignment.zip
```

**Step 2:** Edit `kernel.cu` to implement the code of three kernel functions.

**Step 3:** Compile and test your code.

```
make
./radix-sort                 # Uses the default input size
./radix-sort <m>             # Uses an input with size m
```

**Step 5:** Submit your assignment. You should only submit the following file:

- `kernel.cu`

Compress the two files and submit the tar file in blackboard.

```
tar -cvf p9_<your last name>.tar kernel.cu
```

## 3. Grading:

Your submission will be graded based on the following criteria (Total 100 points).

- Functionality/knowledge: 100 points
  - Correct code and output results
  - Correct usage of shared memory in the kernel to hide global memory access latencies
  - Correct handling of boundary cases
  - Check return values of CUDA APIs
  - Schedule the correct number of thread blocks