

000 ECE251, Computer Architecture – Assignment 2

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002 Submit by May 9, 8PM

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tldr: Implement “Fast Exact Summation Using Small and Large Superaccumulators” by Radford M. Neal.

Problem Statement Radford Neal presented “two new methods for exactly summing a set of floating-point numbers, and then correctly rounding to the nearest floating-point number.” Create a C program to execute these algorithms. Feel free to use his test suite to confirm the correctness of your implementation if you find it convenient — otherwise write your own test suite. Produce diagrams similar to Neal’s to confirm the expected performance characteristics.

Please attach any code you write/modify and cite all third party sources you use to supplement your own work.

Some resources:

Original Paper <http://ee.cooper.edu/~curro/comparch/hw2/paper.pdf>

Original Program

<http://ee.cooper.edu/~curro/comparch/hw2/xsum-anc.tar>

This Document <http://ee.cooper.edu/~curro/comparch/hw2/assign.pdf>