

# Performance Analysis of Common Loop Optimizations

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In High Performance Computing, developers tune applications, especially computationally intensive kernels, for specific systems. In this presentation, we combine two methods for conducting performance analysis: Roofline visualization and hardware counter analysis. The Rooflines allow the user to understand the performance of the application relative to the hardware's potential while the hardware counters enable a deep understanding of how a computational kernel makes use of the CPU. We discuss the background of these methods and demonstrate their use to gain insight into a matrix multiplication benchmark running on an A64FX CPU from Fujitsu.

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