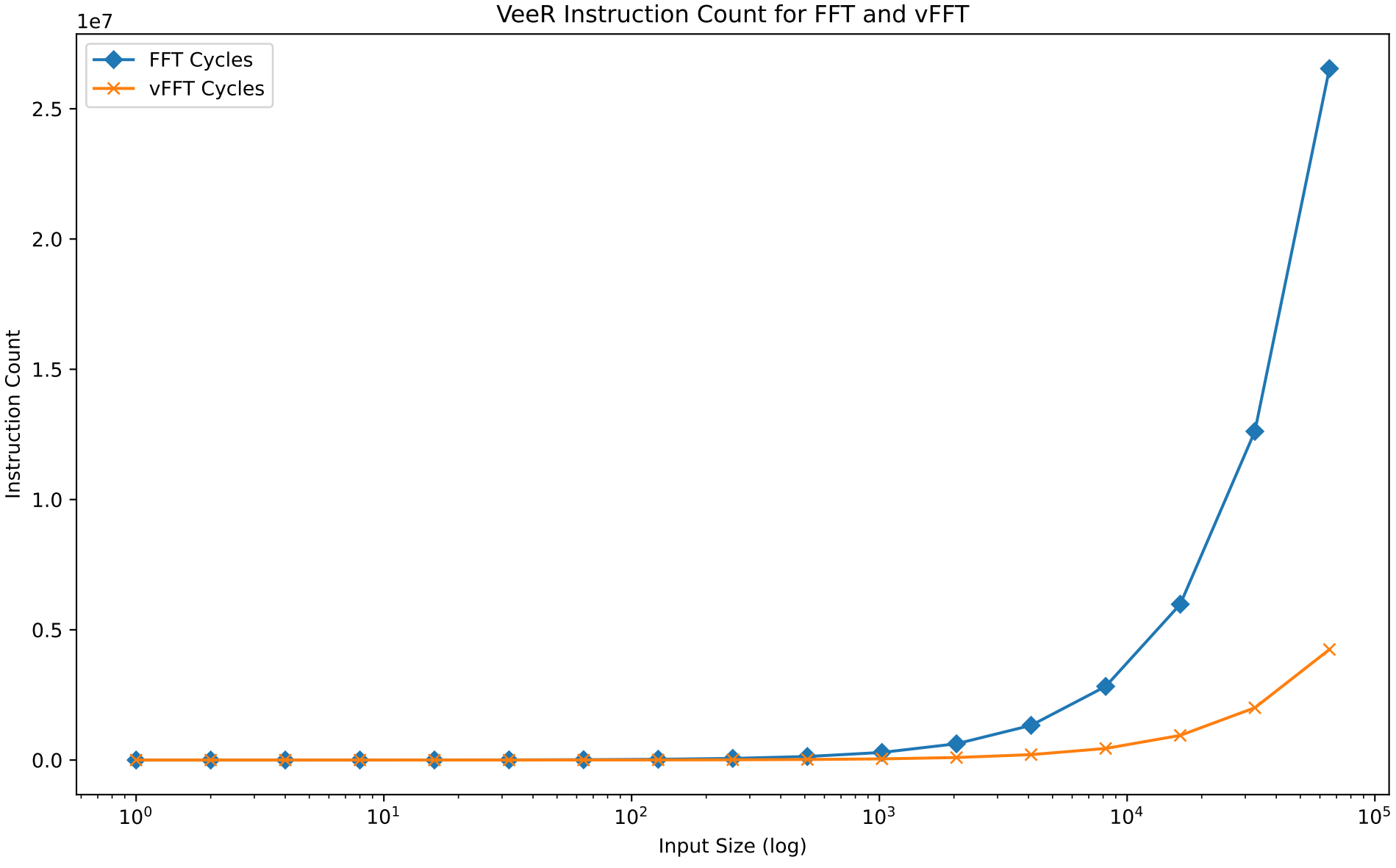
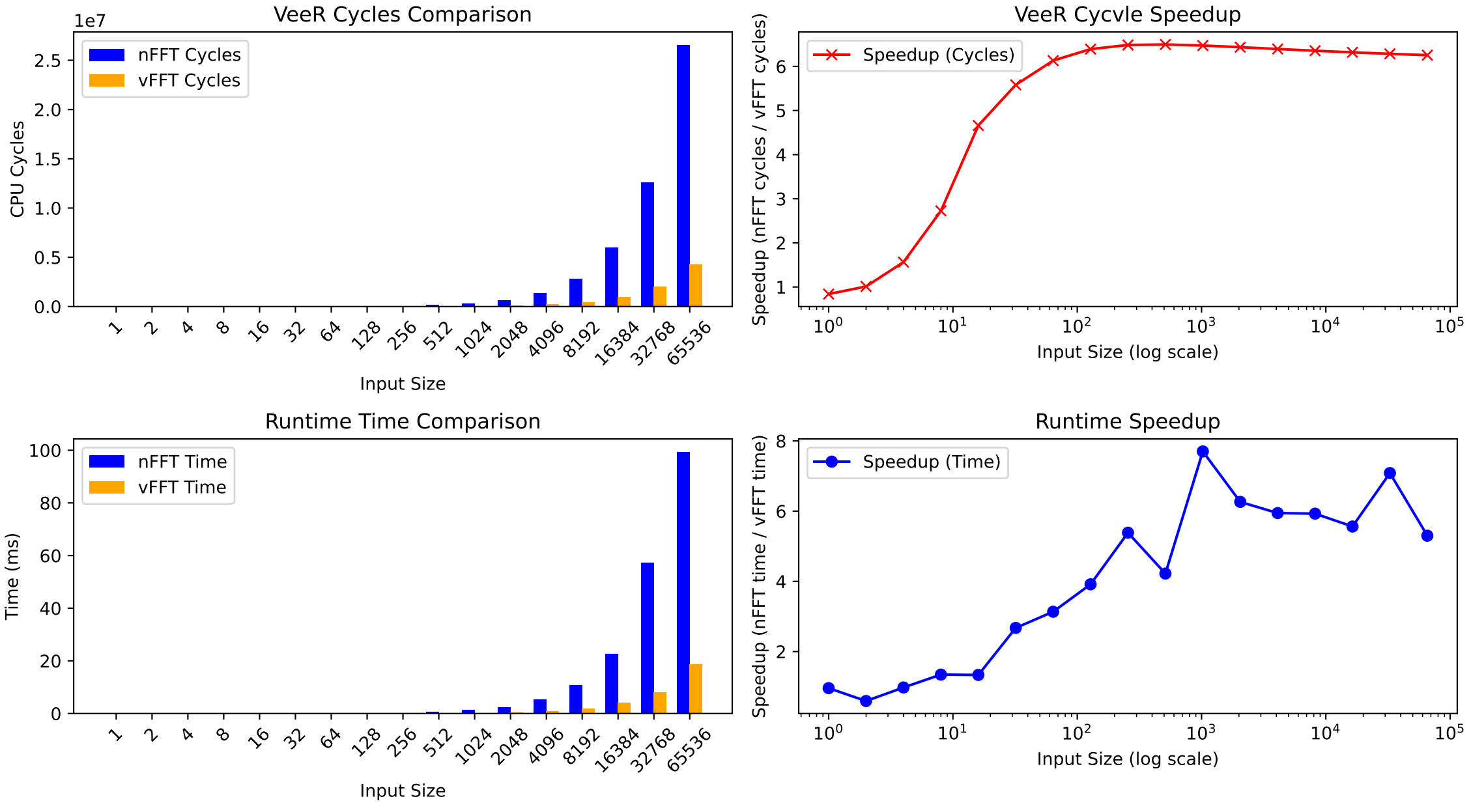
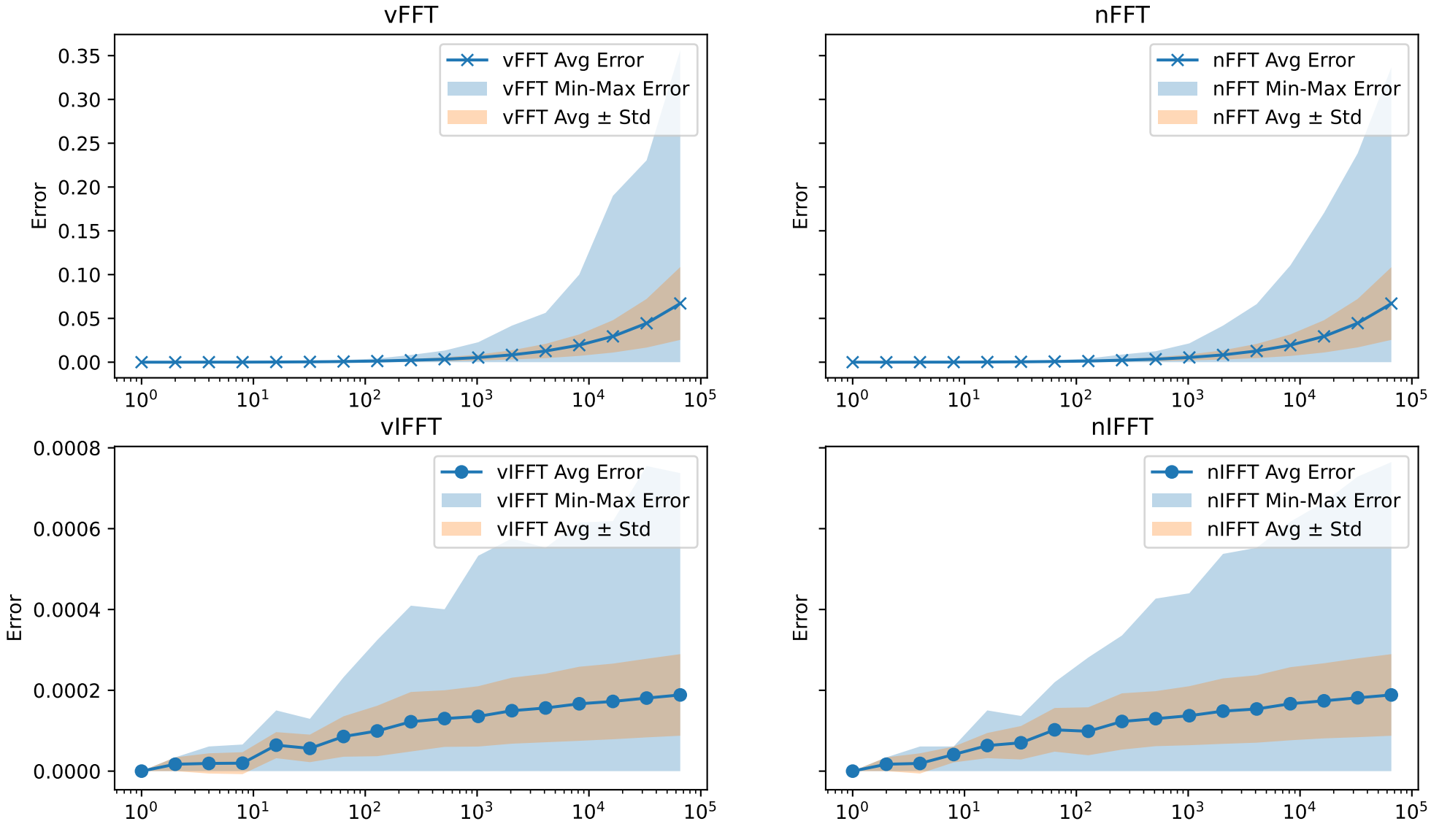
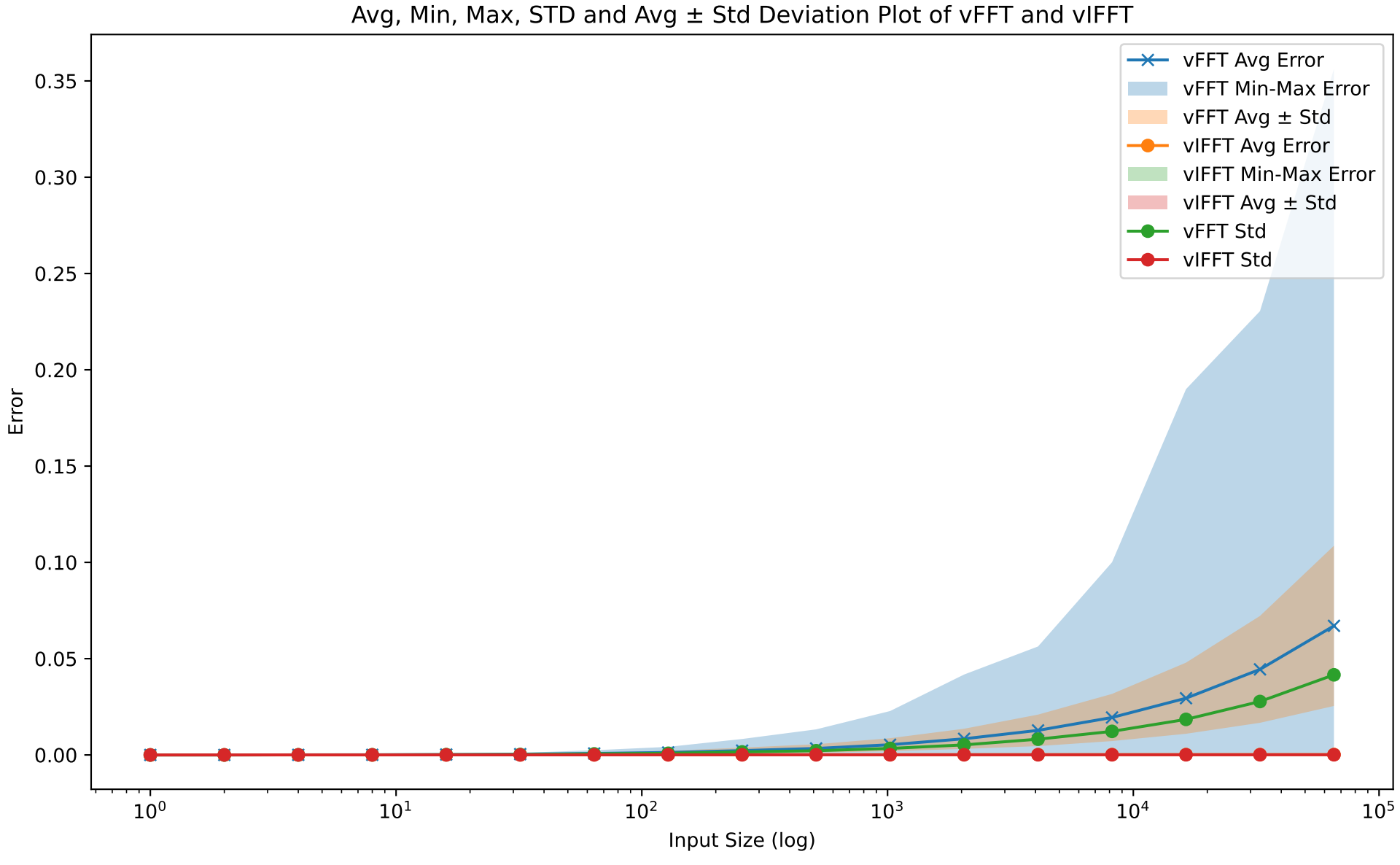
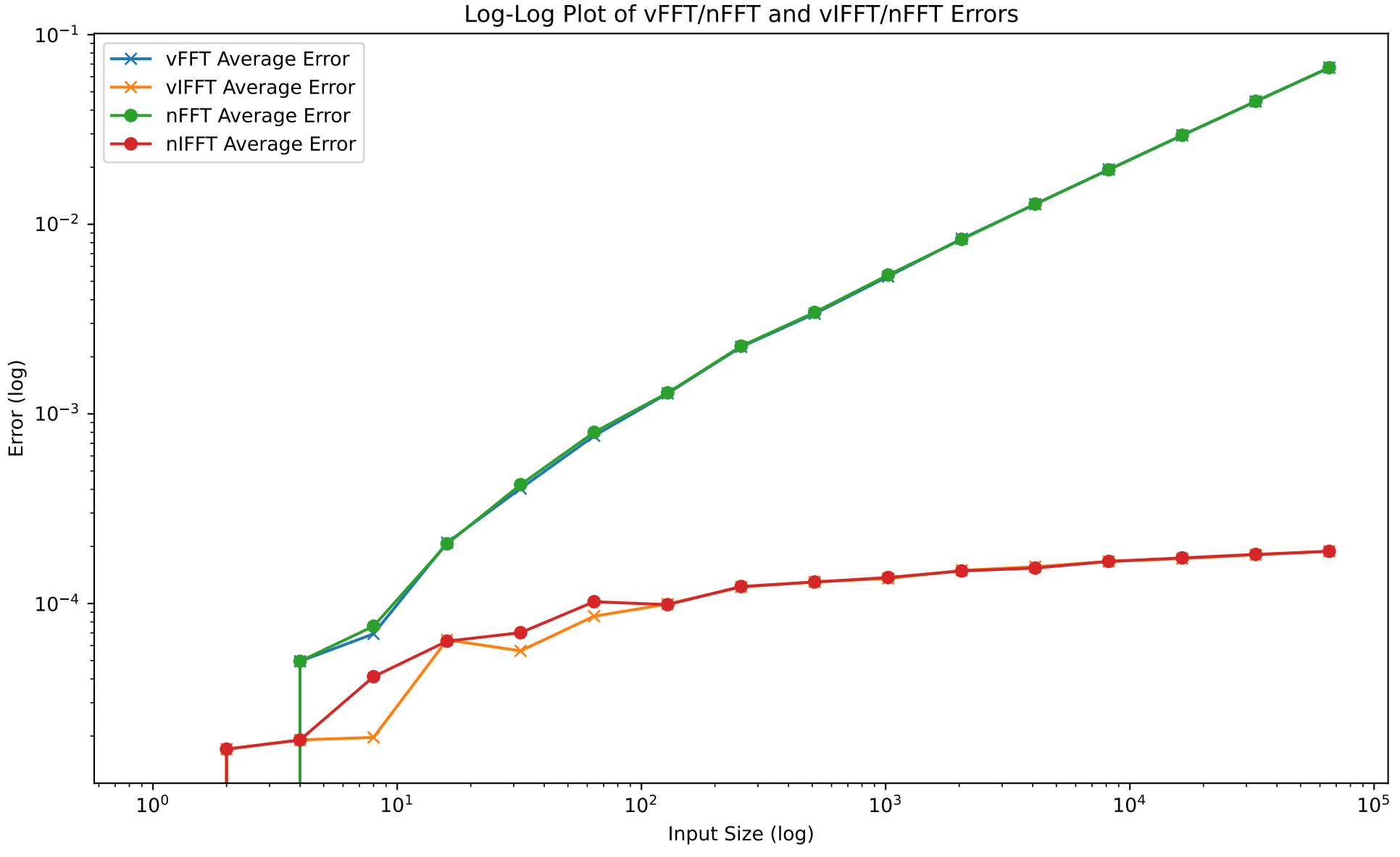

VeeR Instruction Count for FFT and vFFT
1e7
FFT Cycles
vFFT Cycles
Instruction Count
2.5
2.0
1.5
1.0
0.5
0.0
10^0
10^1
10^2
10^3
10^4
10^5
Input Size (log)


CPU Cycles and Runtime Comparision of nFFT and vFFT
VeeR Cycles Comparison
1e7
nFFT Cycles
vFFT Cycles
CPU Cycles
Input Size
VeeR Cycvle Speedup
Speedup (Cycles)
Speedup (nFFT cycles / vFFT cycles)
Input Size (log scale)
Runtime Time Comparison
nFFT Time
vFFT Time
Time (ms)
Input Size
Runtime Speedup
Speedup (Time)
Speedup (nFFT time / vFFT time)
Input Size (log scale)


Error Ranges for nFFT andvFFT
vFFT
vFFT Avg Error
vFFT Min-Max Error
vFFT Avg ± Std
Error
nFFT
nFFT Avg Error
nFFT Min-Max Error
nFFT Avg ± Std
Error
vIFFT
vIFFT Avg Error
vIFFT Min-Max Error
vIFFT Avg ± Std
Error
nIFFT
nIFFT Avg Error
nIFFT Min-Max Error
nIFFT Avg ± Std
Error


Avg, Min, Max, STD and Avg ± Std Deviation Plot of vFFT and vIFFT
vFFT Avg Error
vFFT Min-Max Error
vFFT Avg ± Std
vIFFT Avg Error
vIFFT Min-Max Error
vIFFT Avg ± Std
vFFT Std
vIFFT Std
Error
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
10^0
10^1
10^2
10^3
10^4
10^5
Input Size (log)

Heatmap of Errors (Avg, Min, Max, Std) Across Sizes
vFFT
nFFT
Input Size
1 2 4 8 16 32 64 128 256 512 1024 2048 4096 8192 16384 32768 65536
Avg Min Max Std
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.01 0.00
0.00 0.00 0.01 0.00
0.01 0.00 0.02 0.00
0.01 0.00 0.04 0.01
0.01 0.00 0.06 0.01
0.02 0.00 0.10 0.01
0.03 0.00 0.19 0.02
0.04 0.00 0.23 0.03
0.07 0.00 0.36 0.04
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.00 0.00
0.00 0.00 0.01 0.00
0.00 0.00 0.01 0.00
0.01 0.00 0.02 0.00
0.01 0.00 0.04 0.01
0.01 0.00 0.07 0.01
0.02 0.00 0.11 0.01
0.03 0.00 0.17 0.02
0.04 0.00 0.24 0.03
0.07 0.00 0.34 0.04
Error Value
0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35
0.00 0.05 0.10 0.15 0.20 0.25 0.30


Log-Log Plot of vFFT/nFFT and vIFFT/nFFT Errors
vFFT Average Error
vIFFT Average Error
nFFT Average Error
nIFFT Average Error
Error (log)
Input Size (log)
10^{-1}
10^{-2}
10^{-3}
10^{-4}
10^{0}
10^{1}
10^{2}
10^{3}
10^{4}
10^{5}