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OpenVINO Ryzen 9 3950X

AMD Ryzen 9 3950X 16-Core testing with a ASUS ROG CROSSHAIR VIII HERO (WI-FI) (1302 BIOS) and NVIDIA GeForce RTX 2080 Ti 11GB on Ubuntu 20.04 via the Phoronix Test Suite.

Automated Executive Summary

2 had the most wins, coming in first place for 58% of the tests.

Based on the geometric mean of all complete results, the fastest (2) was 1.009x the speed of the slowest (1). 3 was 0.997x the speed of 2 and 1 was 0.994x the speed of 3.

Test Systems:

1

Processor: AMD Ryzen 9 3950X 16-Core @ 3.50GHz (16 Cores / 32 Threads), Motherboard: ASUS ROG CROSSHAIR VIII HERO (WI-FI) (1302 BIOS), Chipset: AMD Starship/Matisse, Memory: 16GB, Disk: 2000GB Corsair Force MP600 + 2000GB, Graphics: NVIDIA GeForce RTX 2080 Ti 11GB (420/405MHz), Audio: NVIDIA TU102 HD Audio, Monitor:

DELL P2415Q, Network: Realtek RTL8125 2.5GbE + Intel I211 + Intel Wi-Fi 6 AX200

OS: Ubuntu 20.04, Kernel: 5.4.0-48-generic (x86_64), Desktop: GNOME Shell 3.36.4, Display Server: X Server 1.20.8, Display Driver: NVIDIA 455.23.05, OpenGL: 4.6.0, OpenCL: OpenCL 1.2 CUDA 11.1.70, Vulkan: 1.2.142, Compiler: GCC 9.3.0 + CUDA 11.1, File-System: ext4, Screen Resolution: 3840x2160

Compiler Notes: --build=x86_64-linux-gnu --disable-vtable-verify --disable-werror --enable-checking=release --enable-clocale=gnu --enable-default-pie --enable-gnu-unique-object --enable-languages=c,ada,c++,go,brig,d,fortran,objc,obj-c++,gm2 --enable-libstdcxx-debug --enable-libstdcxx-time=yes --enable-multiarch --enable-multilib --enable-nls --enable-objc-gc=auto --enable-offload-targets=nvptx-none,hsa --enable-plugin --enable-shared --enable-threads=posix --host=x86_64-linux-gnu --program-prefix=x86_64-linux-gnu- --target=x86_64-linux-gnu --with-abi=m64 --with-arch-32=i686 --with-default-libstdcxx-abi=new --with-gcc-major-version-only --with-multilib-list=m32,m64,mx32 --with-target-system-zlib=auto --with-tune=generic --without-cuda-driver -v
Processor Notes: Scaling Governor: acpi-cpufreq ondemand - CPU Microcode: 0x8701013
Python Notes: Python 3.8.2
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Full AMD retpoline IBPB: conditional STIBP: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

2

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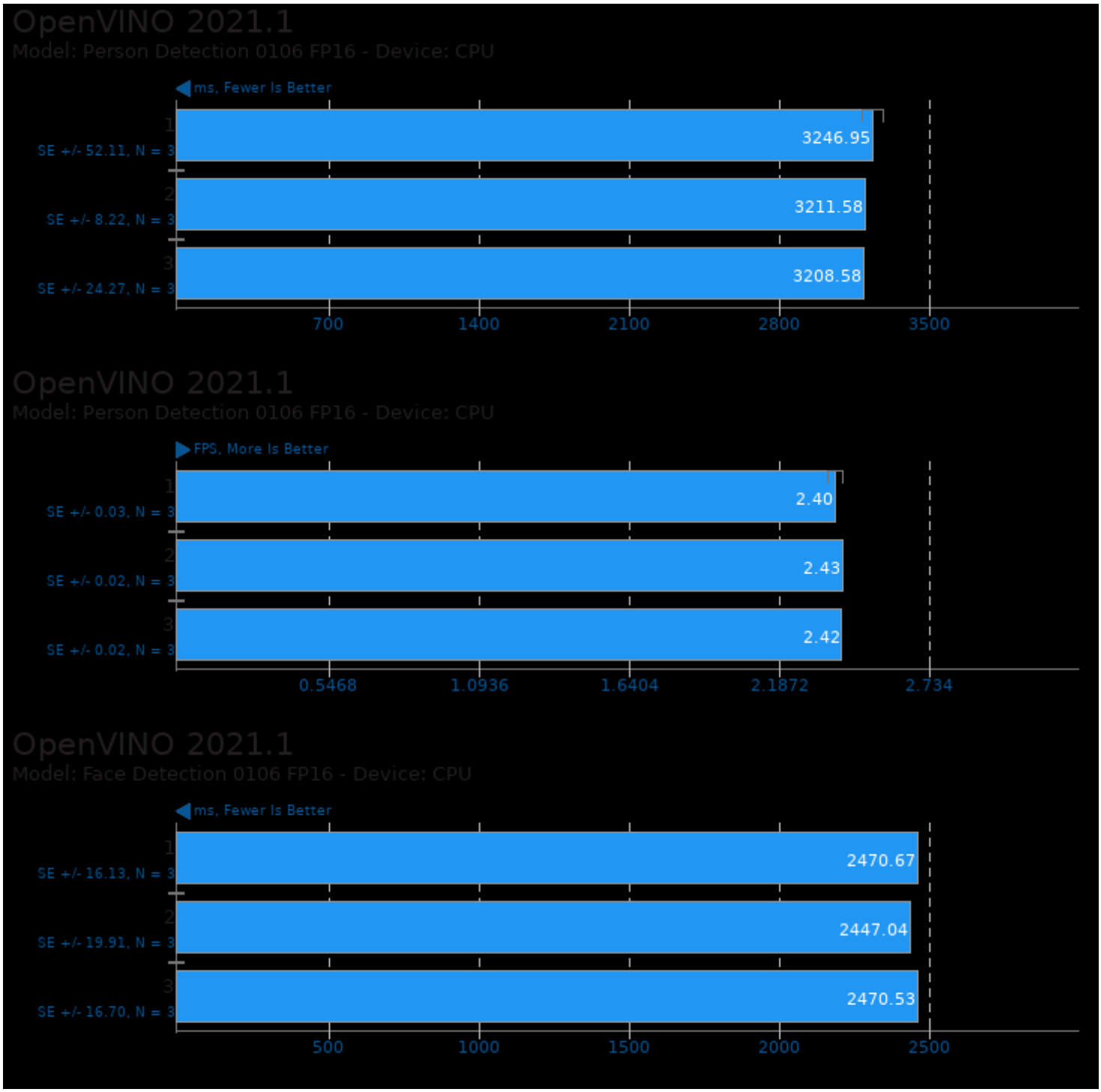
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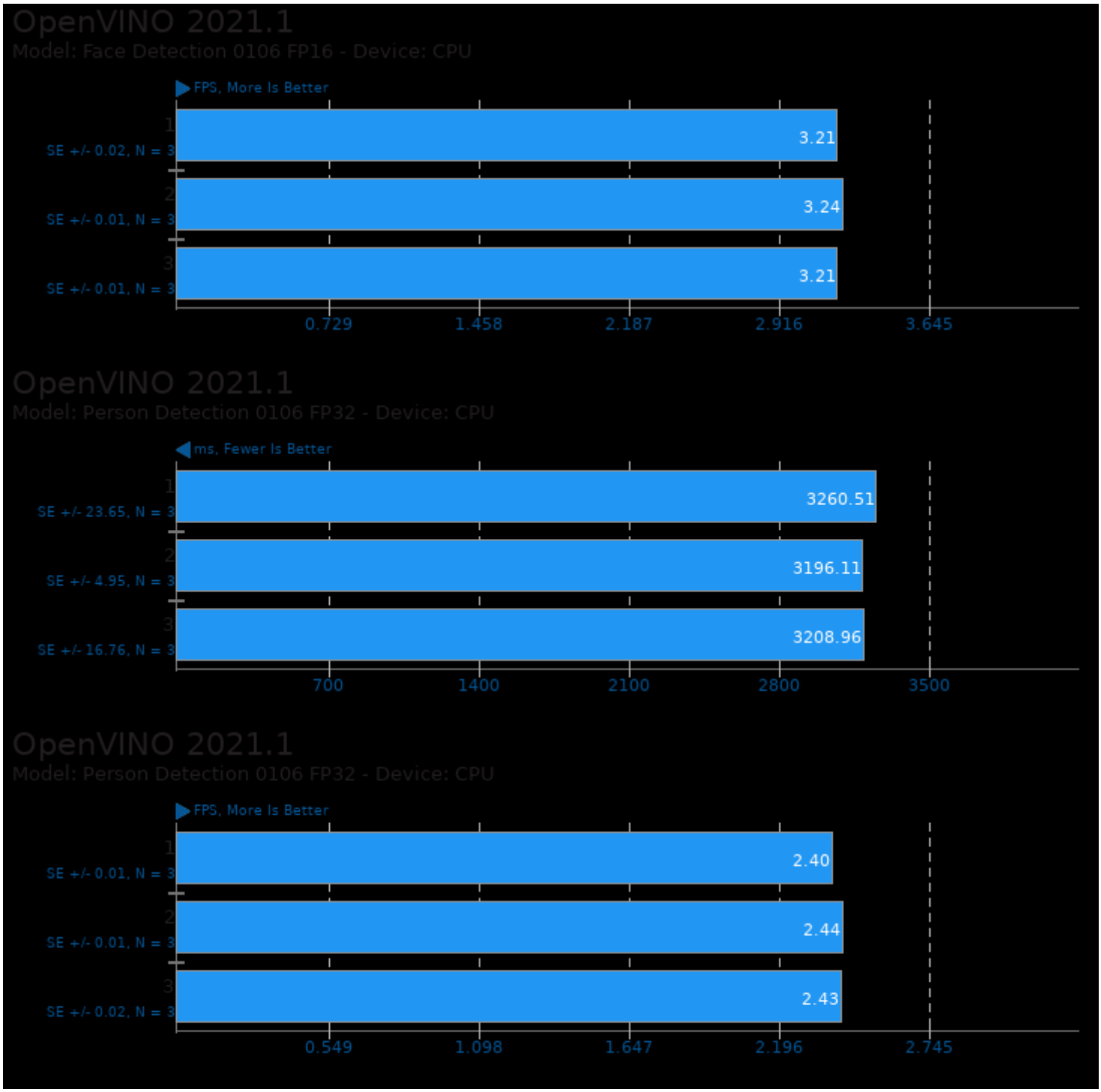
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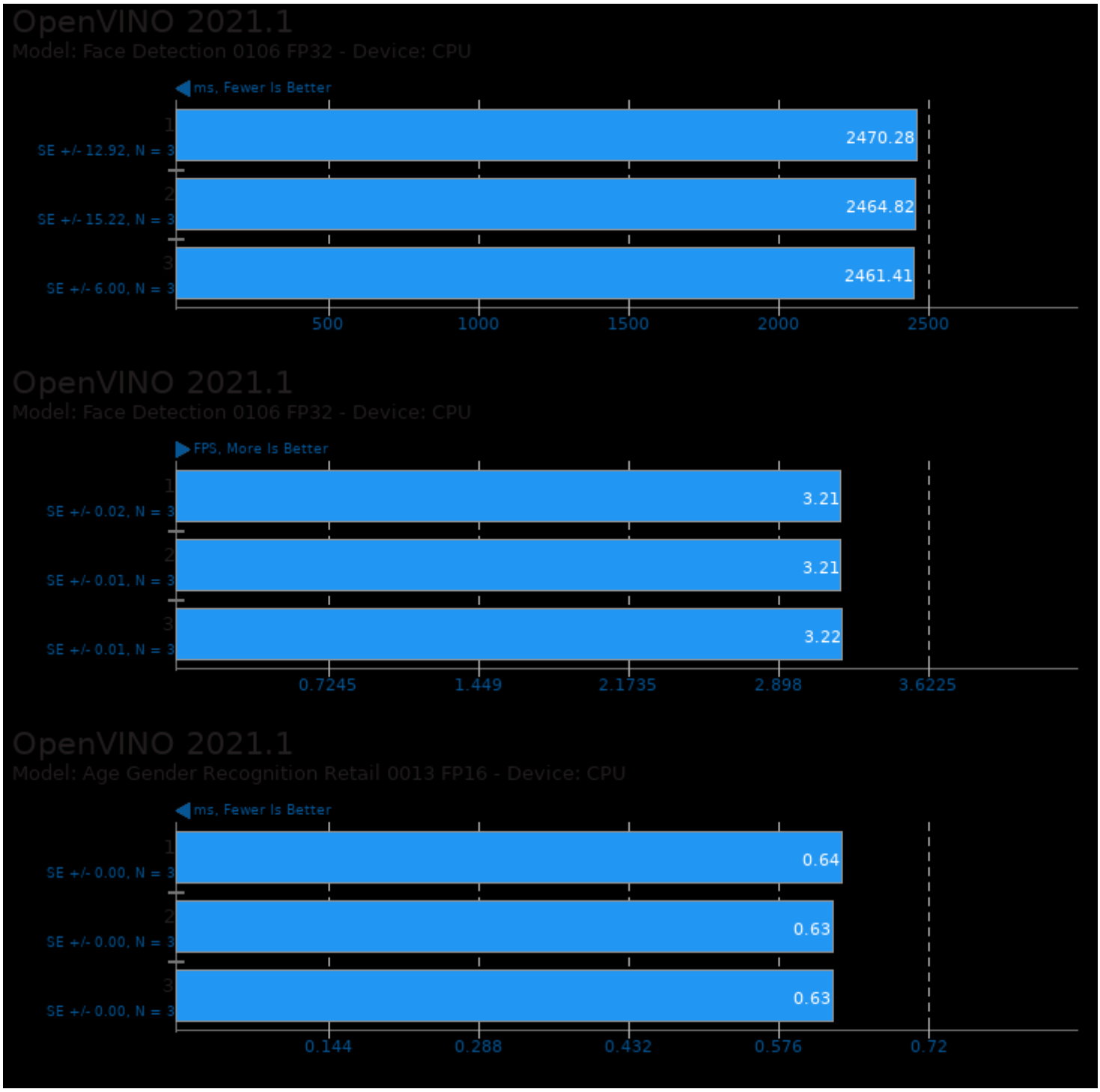
	1	2	3
OpenVINO - P.D.0.F - CPU (ms)	**3247**	3212	**3209**
Normalized	98.82%	99.91%	100%
Standard Deviation	2.8%	0.4%	1.3%
OpenVINO - P.D.0.F - CPU (FPS)	**2.40**	**2.43**	2.42
Normalized	98.77%	100%	99.59%
Standard Deviation	2.1%	1.2%	1.2%
OpenVINO - F.D.0.F - CPU (ms)	**2471**	**2447**	2471
Normalized	99.04%	100%	99.05%
Standard Deviation	1.1%	1.4%	1.2%
OpenVINO - F.D.0.F - CPU (FPS)	**3.21**	**3.24**	**3.21**
Normalized	99.07%	100%	99.07%
Standard Deviation	1.1%	0.7%	0.6%
OpenVINO - P.D.0.F - CPU (ms)	**3261**	**3196**	3209
Normalized	98.02%	100%	99.6%
Standard Deviation	1.3%	0.3%	0.9%
OpenVINO - P.D.0.F - CPU (FPS)	**2.40**	**2.44**	2.43
Normalized	98.36%	100%	99.59%
Standard Deviation	0.8%	0.9%	1.1%
OpenVINO - F.D.0.F - CPU (ms)	**2470**	2465	**2461**
Normalized	99.64%	99.86%	100%
Standard Deviation	0.9%	1.1%	0.4%
OpenVINO - F.D.0.F - CPU (FPS)	**3.21**	**3.21**	**3.22**
Normalized	99.69%	99.69%	100%
Standard Deviation	0.8%	0.5%	0.5%
OpenVINO - A.G.R.R.0.F - CPU (ms)	**0.64**	**0.63**	**0.63**
Normalized	98.44%	100%	100%
Standard Deviation	0.9%	0%	0.9%
OpenVINO - A.G.R.R.0.F - CPU (FPS)	**12350**	**12435**	12393
Normalized	99.31%	100%	99.66%
Standard Deviation	0.6%	0.2%	0.8%
OpenVINO - A.G.R.R.0.F - CPU (ms)	0.63	0.63	0.63
Standard Deviation	0%	0%	0.9%
OpenVINO - A.G.R.R.0.F - CPU (FPS)	**12414**	12408	**12389**
Normalized	100%	99.95%	99.8%
Standard Deviation	0.5%	0.3%	0.5%

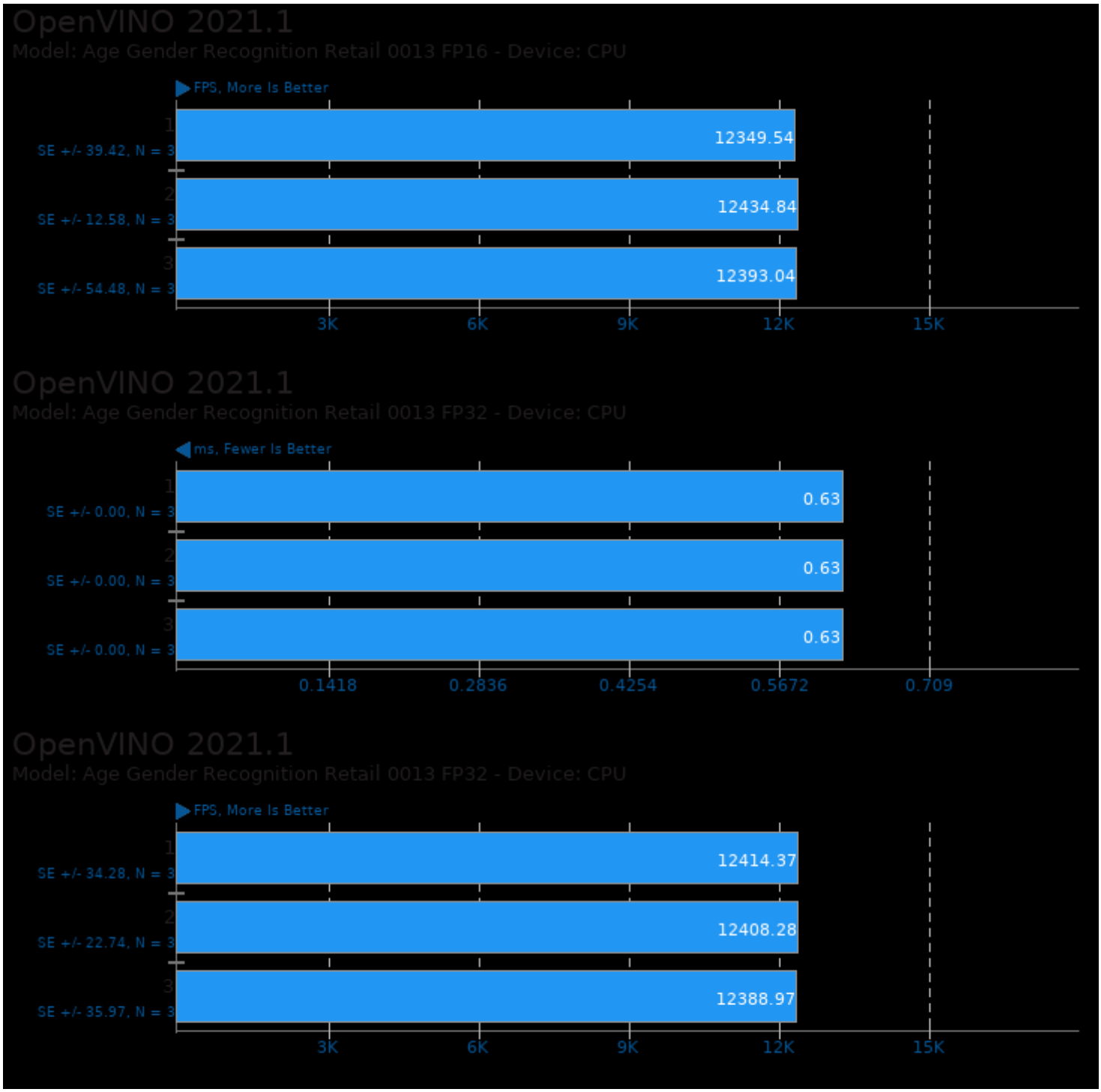
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OpenVINO 2021.1
Model: Face Detection 0106 FP32 - Device: CPU
ms, Fewer Is Better
1
SE +/- 12.92, N = 3
2470.28
2
SE +/- 15.22, N = 3
2464.82
3
SE +/- 6.00, N = 3
2461.41
500
1000
1500
2000
2500
OpenVINO 2021.1
Model: Face Detection 0106 FP32 - Device: CPU
FPS, More Is Better
1
SE +/- 0.02, N = 3
3.21
2
SE +/- 0.01, N = 3
3.21
3
SE +/- 0.01, N = 3
3.22
0.7245
1.449
2.1735
2.898
3.6225
OpenVINO 2021.1
Model: Age Gender Recognition Retail 0013 FP16 - Device: CPU
ms, Fewer Is Better
1
SE +/- 0.00, N = 3
0.64
2
SE +/- 0.00, N = 3
0.63
3
SE +/- 0.00, N = 3
0.63
0.144
0.288
0.432
0.576
0.72



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