The Future of AI Software: Djay Pro

The future of personal computing is being redefined by the integration of AI directly into software, powered by dedicated AI accelerators called NPUs (Neural Processing Units). As Windows evolves to support a new generation of intelligent features, applications are becoming faster, more context-aware, and more capable of adapting to user needs in real time. Signal65 explores the key AI-enabled capabilities emerging within the Windows ecosystem, highlighting how NPUs are unlocking new levels of performance and efficiency across everyday tasks, enterprise workflows, and entirely new user experiences.

What is Djay Pro?

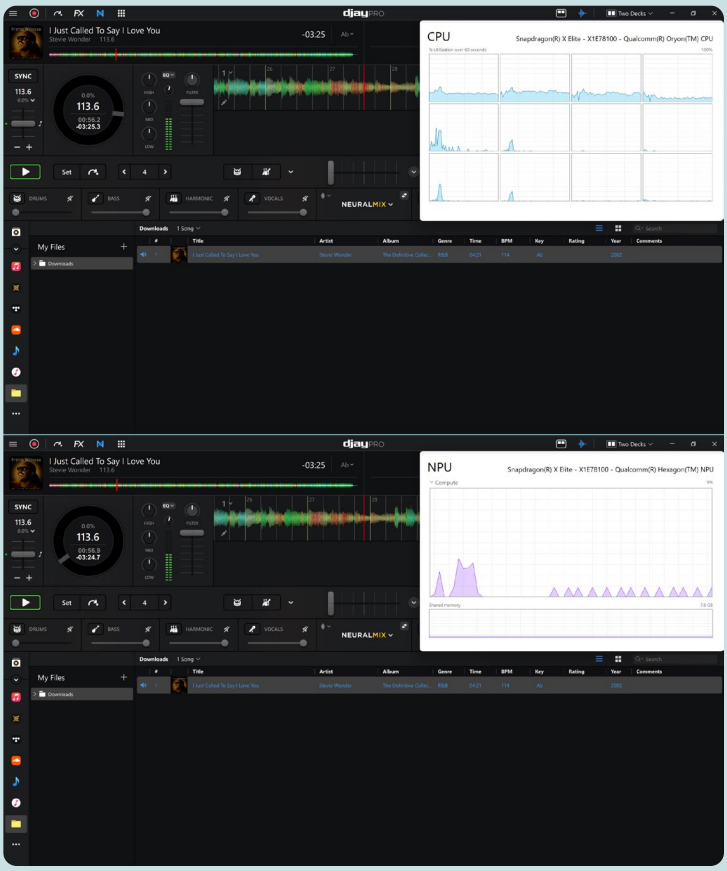
Djay Pro is a premium music mixing and DJing app that offers users the complete DJ experience through a digital interface. The app's developer algoriddim first launched Djay Pro all the way back in 2006, and the company has since outfitted the app with a variety of features. Starting in June 2020, algoriddim started experimenting with AI and introduced its first AI-powered tool, Neural Mix, which can selectively isolate instrument and vocal tracks in audio files where bespoke tracks don't exist, such as in songs stored in the MP3 format. This process would normally be tediously challenging for any user, but Neural Mix does it in real time; thanks to an update in May 2024, Snapdragon X Elite users also can enjoy this locally-powered AI tool.

> As a launch partner with Microsoft and Qualcomm, we've completely rebuilt and enhanced AI-based features including Neural Mix™, Fluid Beatgrid™, and more - all running at incredible speeds thanks to the powerful high performance Neural Processing Unit (NPU).

NPU Utilization & Performance

We tested Neural Mix on an Acer Swift 14 AI to see how it ran on the the Snapdragon X Elite, and it ran perfectly. The integrated Hexagon NPU was easily capable of keeping up with separating instrumental and vocal tracks on the fly. One significant benefit that comes with using an NPU instead of CPU cores for a workload like Neural Mix is power consumption.

In our testing, the Snapdragon X Elite's CPU cores were hardly stressed while running Neural Mix, with only four showing consistent utilization and the remaining eight staying mostly idle. The NPU needed just a little power for Neural Mix to run, whereas the CPU would presumably have required much more power for the same work, assuming that such a workload is even possible in real-time on a typical CPU. Considering how mobile DJs have to be, power consumption, and by extension battery life, is a crucial specification. Qualcomm's flagship PC chip is more than a match for Neural Mix.



Today, over 20 applications leverage Qualcomm's Hexagon NPU to deliver enhanced performance, enable entirely new features, and improve system efficiency. Collectively, these applications offer over 50 unique AI-powered capabilities spanning diverse use cases, from real-time video conferencing effects and advanced photo editing tools to local LLM implementations that bring sophisticated AI experiences directly to users' hardware without cloud dependencies.

This ecosystem demonstrates how NPU acceleration is transforming software across categories, enabling developers to implement AI features that were previously impractical due to performance or power constraints. As more applications adopt NPU optimization, users benefit from faster processing, longer battery life, and AI capabilities that respond instantly to their needs.

Looking Forward

Considering how much time Neural Mix saves for musicians, it's clear that the NPU has a place in Djay Pro and also in the wider landscape of AI software for the near future. Much like how GPUs evolved from specialized graphics processors to general-purpose computing accelerators, NPUs are positioned to become the dedicated platform for AI workloads, delivering superior performance compared to both CPUs and GPUs for machine learning tasks.

Through continued investment in both hardware and software AI capabilities, Qualcomm and Microsoft are establishing NPUs as the foundation for local AI processing, enabling more responsive, efficient, and capable applications across the Windows ecosystem.

Over 50 NPU-powered AI Experiences on Snapdragon X Series Processors

Creator Apps	AI Experience
Adobe Premiere Pro	• Audio Category Tagger to sort different audio clips into categories like ambience or dialog • Scene Edit Detection automatically labels cuts in raw footage for easier editing • Text-Based Editing builds a transcript for a video, and editing the transcript instantly edits the video for rough cuts
Automatic1111	Image generation from text using Stable Diffusion and ability to customize parameters
Blender+ControlNet	3D scene to 2D image generation via tools like Automatic1111
Copilot+	• Image generation and photo editing using AI-powered tools like generative fill • Easy step retracing with Windows Recall • Improved gaming performance and visual quality with Super Resolution • Video conferencing features like real-time translation, auto framing, portrait lighting, and more
DaVinci Resolve	• AI-accelerated Magic Mask tool for objects and people • Better resolution upscaling during rendering
Djay Pro	Separating different instruments and vocals with Neural Mix, and syncing different songs with varying rhythms together with BeatGrid
Gigapixel AI	Crisp upscaling for photos originally taken at low resolution
GIMP+SD	Image generation from text using Stable Diffusion
Luminar Neo	Photo editing with AI-assisted sharpening effects and resolution upscaling
Moises Live	• Instrument and vocal separation for music editing • Enhanced performance compared to running on the CPU
Enterprise Apps	**AI Experience**
Camo Studio	On-the-fly video effects like auto-framing, virtual green screen, and blurred background
Copilot+	• Image generation and photo editing using AI-powered tools like generative fill • Easy step retracing with Windows Recall • Improved gaming performance and visual quality with Super Resolution • Video conferencing features like real-time translation, auto framing, portrait lighting, and more
Dynamo AI	Guardrails for AI provided through organizations to prevent misuse
McAfee	AI-powered detection of deepfaked audio
Zoom	Virtual background replacement and portrait lighting for video conferencing
Productivity Apps	**AI Experience**
AnythingLLM	• Easy setup for small and powerful Microsoft and Meta LLMs with long context windows • Useful LLM features like automation, RAG, and inferencing"
Copilot+	• Image generation and photo editing using AI-powered tools like generative fill • Easy step retracing with Windows Recall • Improved gaming performance and visual quality with Super Resolution • Video conferencing features like real-time translation, auto framing, portrait lighting, and more
Liquid Text	Fast annotation of documents using AI
LMStudio	Run LLMs locally and configure them to your liking

Visit Qualcomm for more info: https://www.qualcomm.com/snapdragon/laptops-and-tablets/npu-powered-ai-experiences

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