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Code Overview:

This code goes beyond basic image processing by blending **cyberpunk aesthetics** with **adaptive transformations**. Instead of just applying filters, it **intelligently enhances images** based on their brightness, adding a **futuristic yet cinematic touch**.

Key Techniques Used

- **Cyberpunk Glow** – **HSV color manipulation** boosts **saturation and brightness**, creating a **neon-lit, high-energy look**.

- **Vintage Film Effect** – A **sepia transformation** brings a **subtle old-school film vibe**, balancing modern vibrance with a **classic touch**.

- **Adaptive Pixelation** – **Bright areas get pixelated more**, while **darker regions retain detail**, creating a **surreal depth effect**.

- **Enhanced Sparkle Effect** – **Gaussian blur** and **threshold-based processing** simulate **shimmering light reflections**, making **bright pixels sparkle**.

- **Gradient-Based Blending** – **Multiple layers blend smoothly** using **transition gradients**, ensuring a **dynamic, natural look**.

Algorithms, Tools, and Libraries:

The code uses **OpenCV** for **image processing**, **NumPy** for **numerical operations**, and **Matplotlib** for **visualization**. It applies **thresholding**, **HSV-based adjustments**, **pixel-wise transformations**, and **Gaussian blurring**, making it **more than just an average filter**—it's a **creative blend of AI-assisted enhancement and artistic expression**.