



Picture Perfect

Computational Photography
Brings Advanced Camera
Techniques to Smartphones



Computational Photography Overcomes the Physical Limitations of a Smartphone's Small Lenses and Sensors

Physics Prevents Tiny Lenses From Producing Professional-Quality Photos Without Help

Smartphones meet this challenge using computational photography — a digital image-capture method that employs AI-integrated software, digital computation and powerful hardware instead of optical processes.

The Result Is
Advanced-Level
Photographs
Without
Pro Gear or
Advanced
Editing Tools



What Happens When You Take a Photo With a Smartphone?

Before You Take a Photo

When you open the camera app, your smartphone begins taking a series of images that is stored in a memory buffer before you even click the shutter button.

- On certain devices, memory bandwidth and capacity are reserved — or “pinned” — for the exclusive use of the camera.
- That dedicated memory is used for processes that optimize images and help with a lag-free photography experience.

AI Adjusts Camera Settings

As you tap the shutter, adjustments to ISO, aperture and shutter speed are made to help capture the best image.

- AI uses information in allocated memory to make fine adjustments.
- Complex photography hallmarks like shallow depth of field are simulated using images from multiple lenses and sensors.
- Composition, color saturation and contrast are automatically tweaked using machine learning techniques to achieve best results.

Images Merged for Best Results

Advanced smartphone camera techniques combine a series of images that are pulled from the memory buffer and merged to create the perfect shot.

Example of a series of “stacked” photos used to assemble a portrait



High-Capacity, High-Bandwidth Memory Accelerates Mobile Photography

Memory is essential to computational photography, allowing for a smooth user experience that creates advanced-level photos. High-capacity, high-bandwidth Micron LPDDR5 helps you capture those fleeting moments without the lag that could make you miss the shot.

Micron LPDDR5 by the numbers:

Maximum
6.4 Gb/s
data rate

Up to
12GB+
capacity

Greater than
20%
power efficiency
vs. LPDDR4

Learn more: micron.com/5Gmemory

