

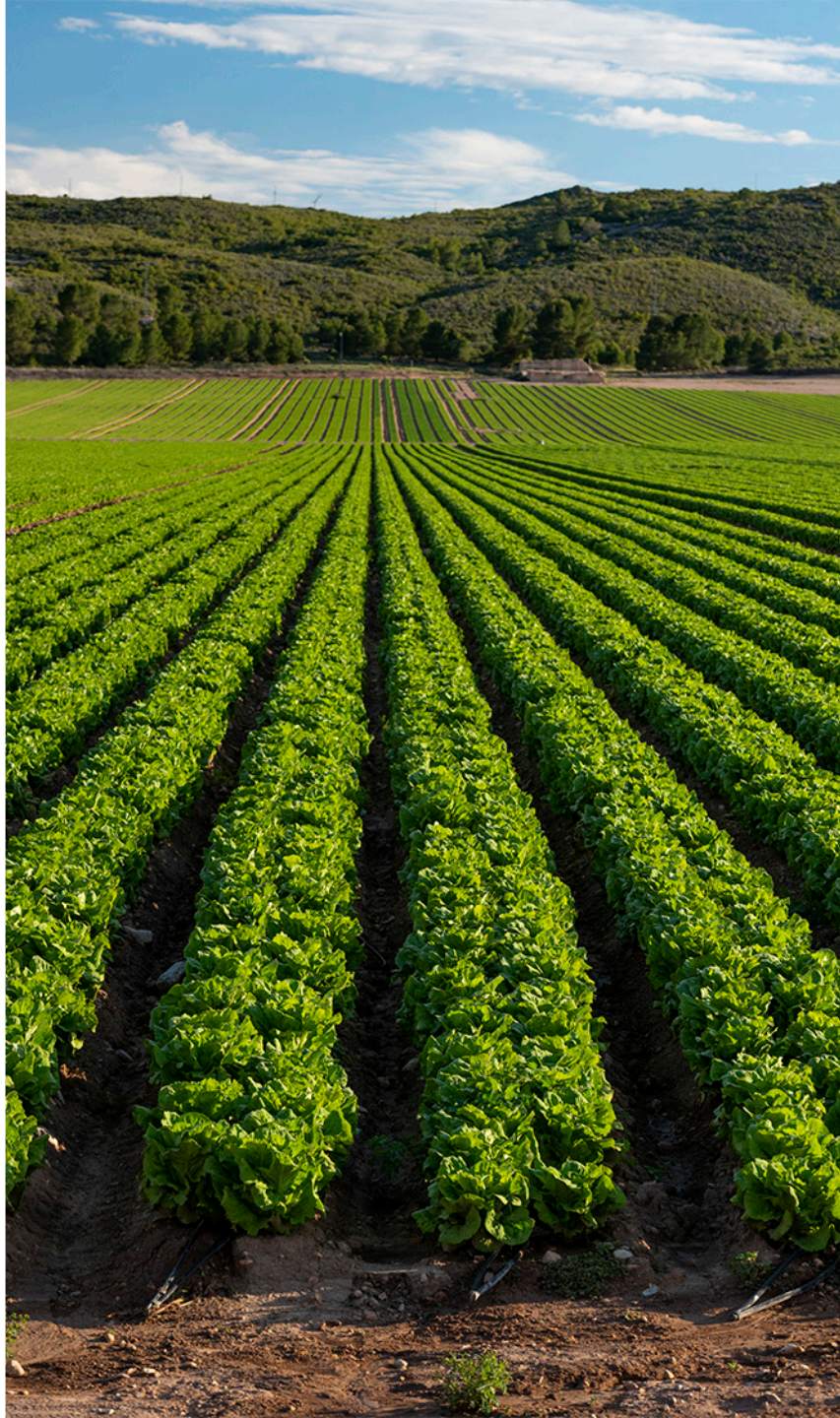
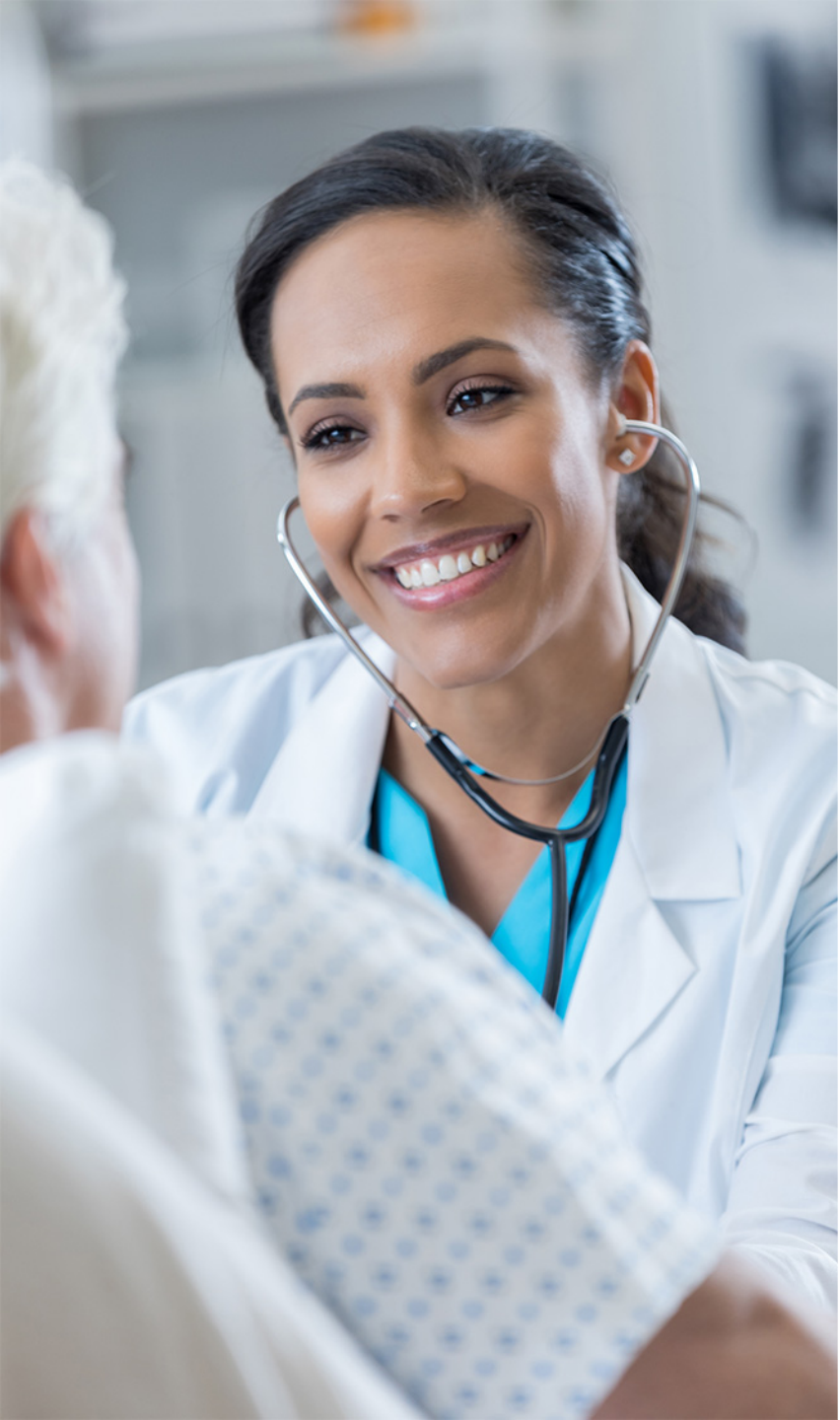
Qualcomm
snapdragon



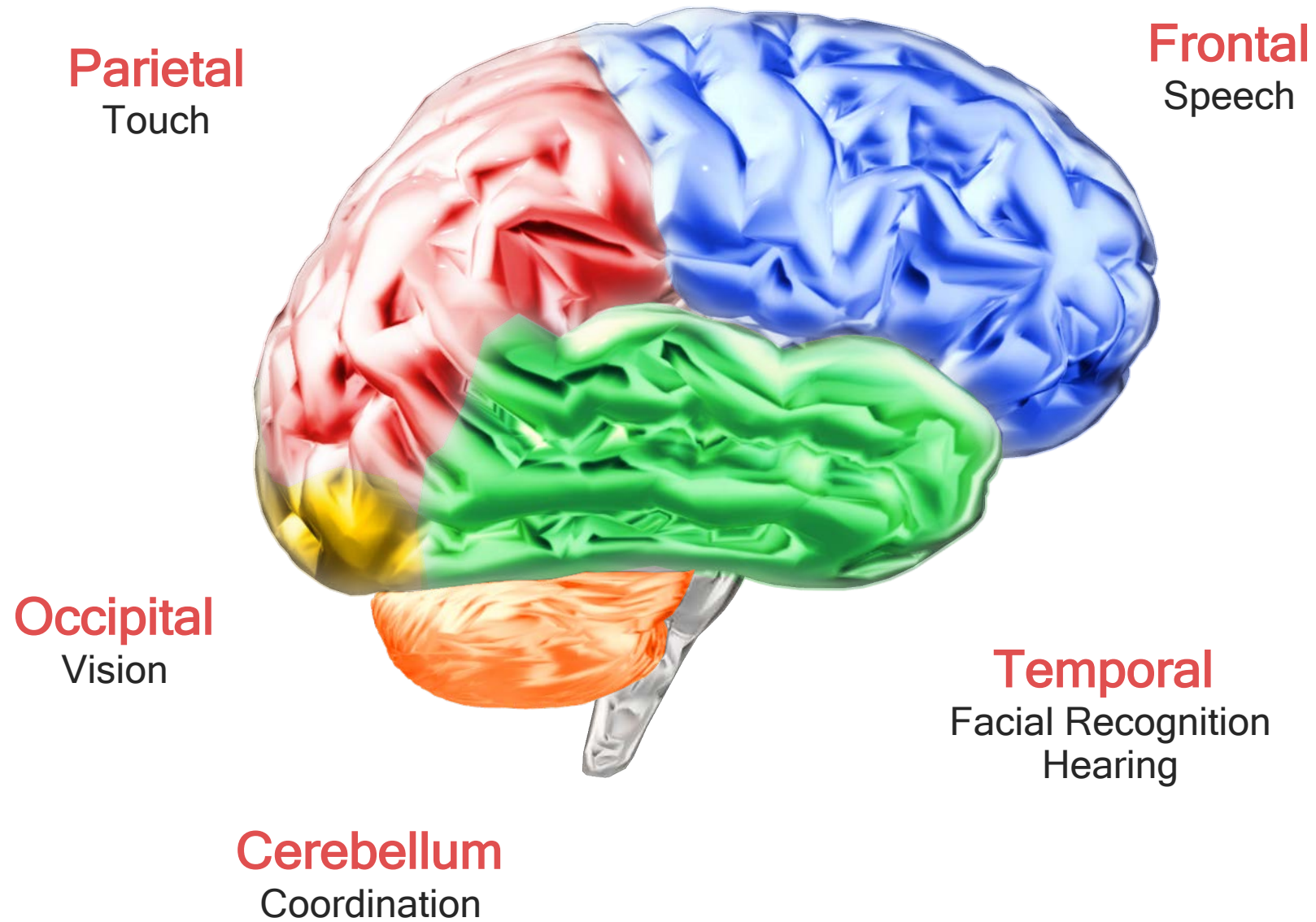
Gary Brotman

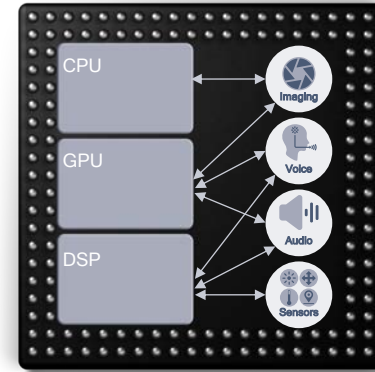
Sr. Director, Product Management
Qualcomm Technologies, Inc.











Modern Human Brain

Smartphone Chip

Evolution (Years)

~300,000

~12

Active Users

~7.5 Billion

~3 Billion

Avg. Weight

~4.5 kilograms

1-2 grams

Typical Power

~20 Watts

>5 Watts

Speed

10-15 KHz

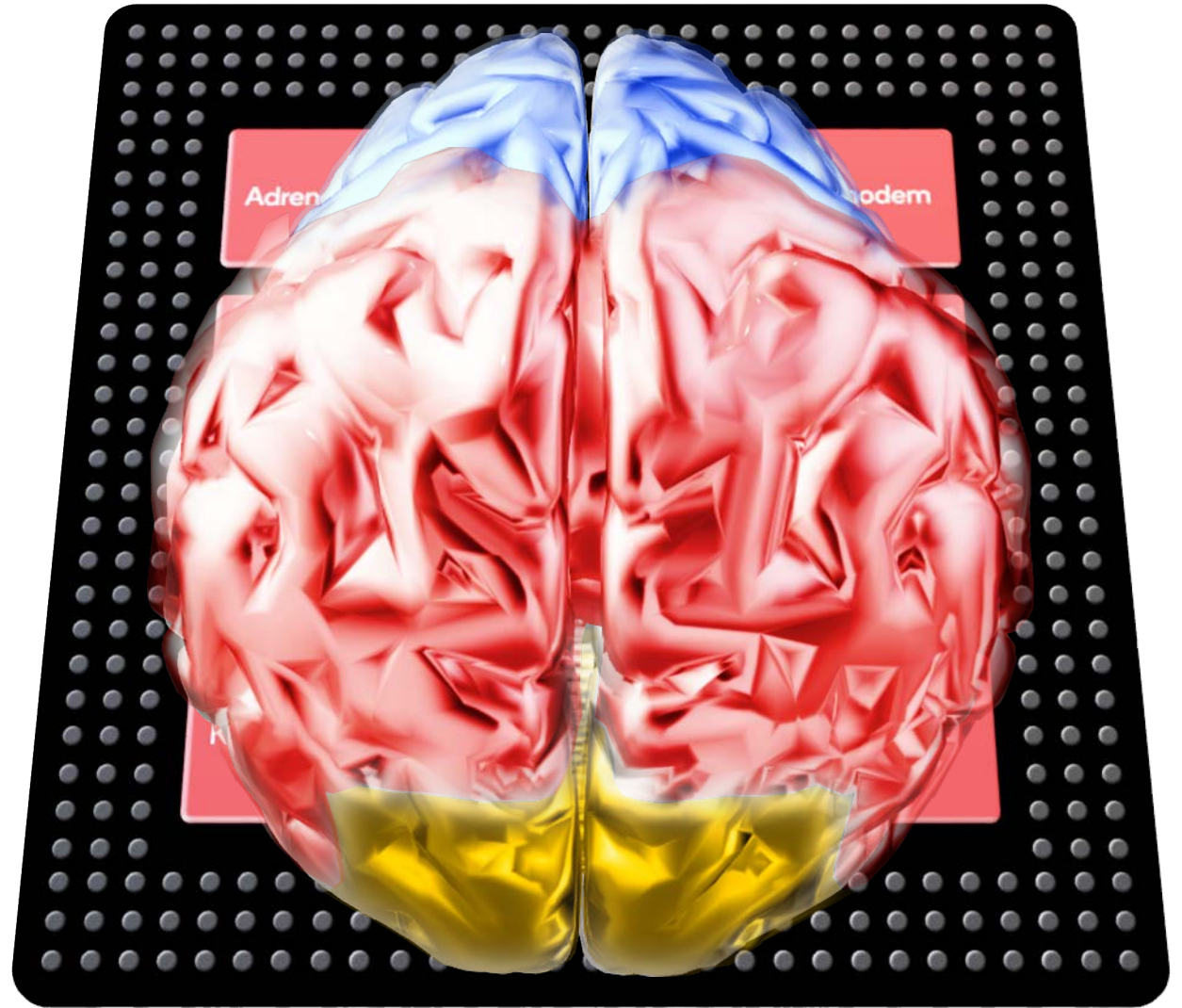
1-30 GHz

Connections

~100 Billion Neurons

~6 Billion Transistors

Snapdragon 855



50%
More ALUs
FP32 & FP16

Adreno 640

Snapdragon X24

Hexagon 690

Wi-Fi/BT/Location

Spectra 380

New Tensor Accelerator

4x Vector eXtensions

Optimized Scalar

Voice Assistant

INT16, INT8 & Mixed

Adreno 640

Snapdragon X24

Hexagon 690

Wi-Fi/BT/Location

Spectra 380

Kryo 485

Hexagon 690

Wi-Fi/BT/Location

Spectra 380

Kryo 485

Security

New dot product
instructions
FP32 & INT8

50% More ALUs
FP32 & FP16

New Tensor Accelerator
4x Vector eXtensions
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Voice Assistant
INT16, INT8 & Mixed

New dot product
instructions
FP32 & INT8

Adreno 640

Snapdragon X24 modem

Hexagon 690

Wi-Fi/BT/Location

Spectra 380

Kryo 485

Security

Snapdragon 855



4th Gen
AI Engine

TensorFlow PYTORCH

lePaddle Cognitive Toolkit

Tensorflow

rocessing SDK

Qualcomm Math

agon NN

Kryo CPU

Hexagon

Scalar

Vector

Tensor

7+
TOPS

Trillion Operations
Per Second

3X

Increase in Snapdragon
AI Performance

2X

Double the AI Performance
of the Competition

AI Software Partners - Expanding Roster for Snapdragon 855











Outfocus

Long Distance

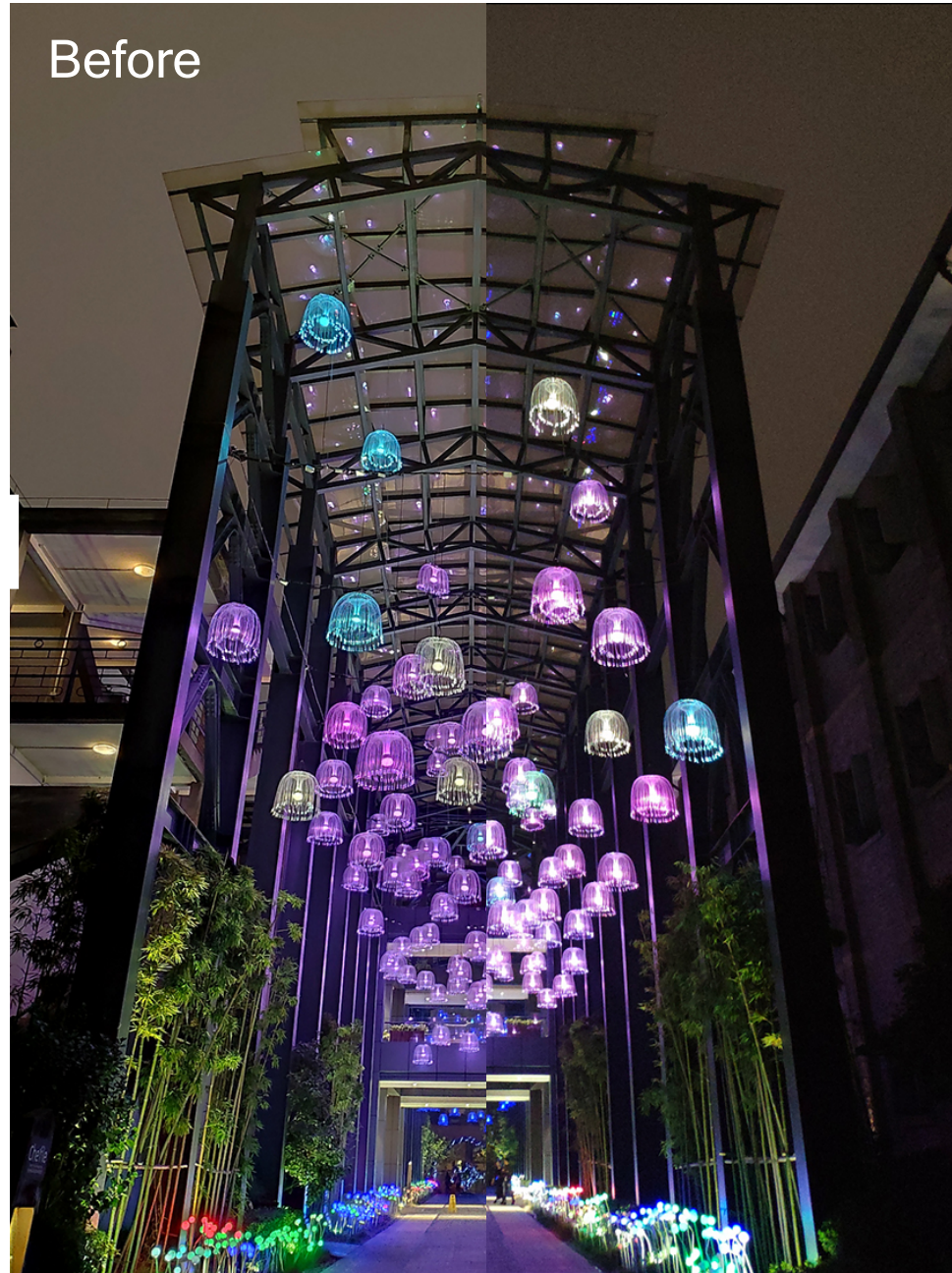


Before



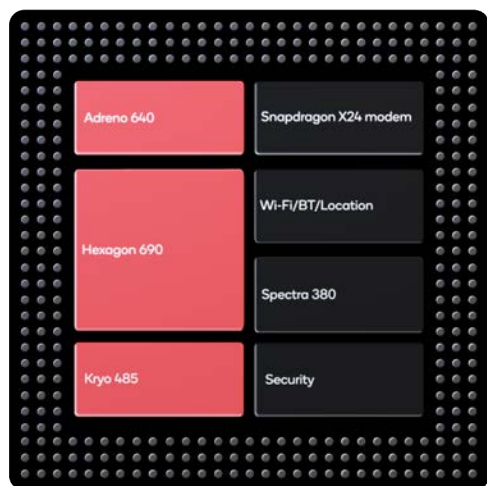


Before





Qualcomm
AI Engine

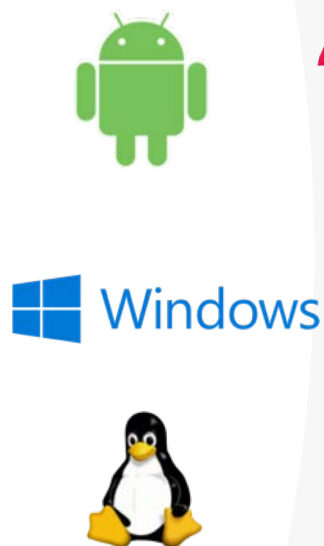


Qualcomm AI Engine

Frameworks



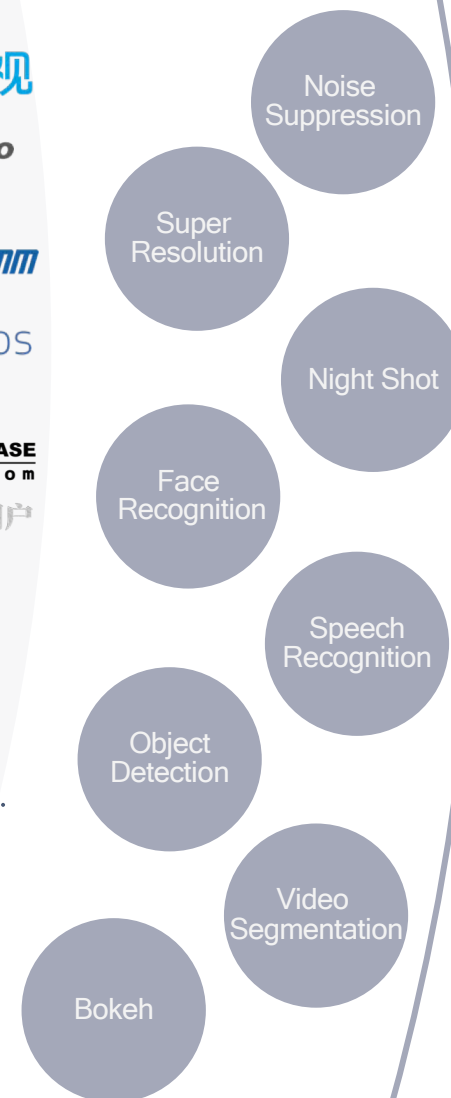
OS



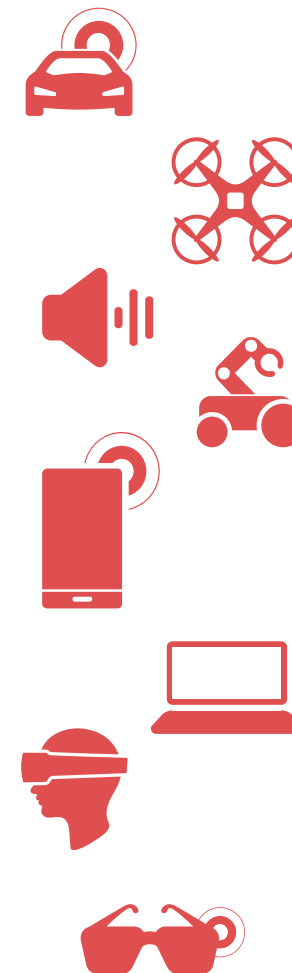
Ecosystem



Features



Devices



Snapdragon 855

AI highlights

4th Gen AI Engine

7+ trillion operations per second

3x performance improvement

Experiences built for the future

