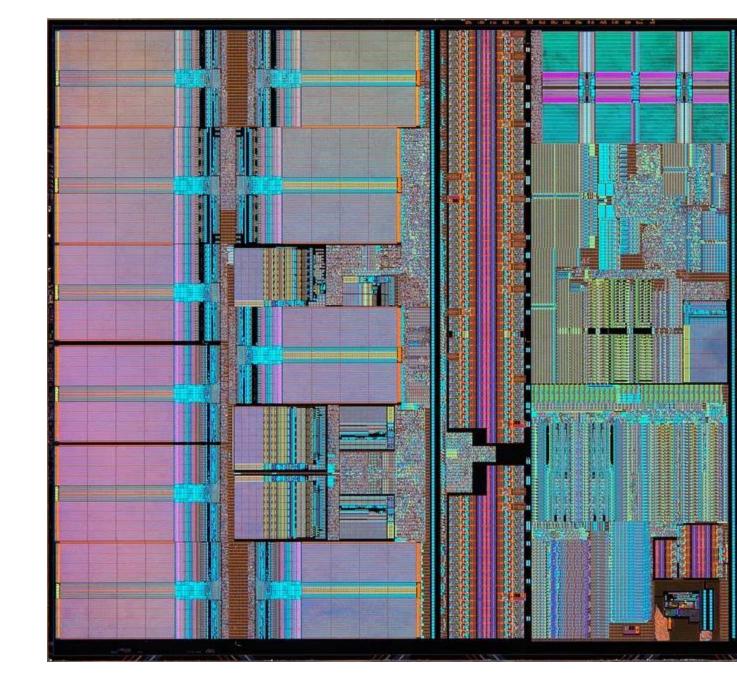
2023 EXPERT INSIGHT



How AI will impact Mobile Communications

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MOBILE EXPERTS

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Background

Massive complexity in mobile networks

Beyond human capability

What AI is used for in 5G networks

Traditional methods with Look-up Tables

Look-up tables don't cut it anymore

Statistical Network KPI optimization

Radio resource tweaks

Traffic steering

Energy Savings

Simple stuff like sleep modes

Energy savings in more complex networks

Issues with power cycling in radio hardware

Intent-based optimization

Definition of intent

How to define intent

Intent applied to private networks

What AI will be used for in future networks

Telecom Operators

AI to optimize FWA and mobile simultaneously

Increased capacity using AI on beamsteering

Optimize for different apps

Service levels for different applications without using DPI

Monetizing the "premium" experience and using AI to make it work better

Private 5G Networks

Optimizing for network parameters like latency or reliability

Optimizing for specific applications in real time

Where the AI will be executed

AI in the BBU and DU on the radio site

AI in the CU and central data centers

Integration with semiconductor chips

How much benefit is possible

Examples of benefit in 13 different networks

How much capacity benefit is expected

How much energy savings benefit is expected

Conclusions

ROI for AI in the RAN

Figure 1: Increasing Complexity of Mobile Networks

- Figure 2: Time constants for various AI decisions
- Figure 3: Illustration of how Intent translates human desires into AI instructions
- Figure 4: Beamsteering coordination

Figure 5: Illustration where various AI tasks will be performed