Personalizing the World's Online Experience

Data centers transform incredible amounts of data into tailored recommendations

44,000,000,000,000,000,000,000

bytes of data make up the digital universe[1]

To help navigate it, the world's leading companies have moved from simply serving up unfiltered information to using recommendation engines powered by artificial intelligence (AI) to predict and present only the things their customers and users may be interested in. The result is a highly personalized internet.

A recommendation engine determines what is seen online

eCommerce

Displays products shoppers may be interested in

Media streaming

Shows movies, videos or music audiences may like

News & social

Populates users' feeds with relevant content

The numbers are staggering!

350+ million products listed on Amazon[2]

300 hours of video uploaded to YouTube each minute[3]

60 billion posts & messages posted on Facebook each day[4]

Memory and storage fuel the transformation of data into personalized recommendations

How does a recommendation engine work?

1 Collection

Data from the digital universe is captured, including how people act and interact online.

High-performance memory is necessary for moving data quickly and efficiently as it's collected. High-capacity **QLC SSDs** capture and store this massive amount of data.

2 Filtering & Preprocessing

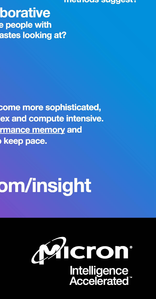
Captured data is filtered and distilled to only relevant information.

Server **DRAM** temporarily holds the data being preprocessed. Fast, high-capacity NVMe™ **SSDs** hold the refined data that will be used for AI training.

3 Training

Compute-intensive AI training develops a model that can recognize patterns in the data and suggest relevant content.

High-performance NVMe **SSDs** rapidly feed filtered and processed data to data-hungry AI processors. **High-Bandwidth Memory (HBM)** provides an ultra-fast buffer to store the data and AI model during the training process.



Trained model

4 Recommendation

As customers and users browse, trained models recommend personalized content.

User data and trained models are stored in **memory** for near-real-time recommendations. Fast **SSDs** cache any data that doesn't fit in memory.

5 Optimization

Whether a user takes or ignores a recommendation feeds back into data collection, honing future recommendations.

Recommendation engines make suggestions in different ways

As recommendation engines become more sophisticated, they become increasingly complex and compute intensive. So future demand for high-performance memory and storage solutions will intensify to keep pace.

Learn more: micron.com/insight

Sources

[1] IDC Data Age Study 2025
[2] Retail TouchPoints: How Many Products Does Amazon Carry?
[3] MerchDope: 37 Mind Blowing YouTube Facts, Figures and Statistics – 2020
[4] Brandwatch: 126 Amazing Social Media Statistics and Facts

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