# Google Architecture & Technologies



**Surface Web**

**Deep web / YouTube ($10B)**

**Data Centers / Cloud**

**Computing / AI ($10B)**

Deep Mind

**Google**

Videos

Crawling / Spireding

Search Algorithms

URLs / Web Pages

Hadoop / MapReduce

Spark

NoSQL

Indexes

Data Mining / ML

Deep Learning / RL

**Searchers / Users**

Search Interface

Page Rank

Vector Space (tf . idf)

Search Logs

Ad Display

Ad Platform

**Advertisers / Merchants ($100B)**