

### Context & contents

- Context:
  - Computing is shifting from powerful desktops/laptops to cloud megacomputers plus heterogeneous client devices
  - Advances in client & cloud from Microsoft Research (MSR) & collaborators
  - Work of dozens of researchers & engineers
    - Algorithm design and implementation, mixing new technology from several areas
    - Emphasis on technologies that led to new kinds of products
- Contents:
  - Mobile & cloud computing architecture & challenges
  - Examples of new mobile scenarios enabled by cloud + smart devices
  - Big data & cloud analytics

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## Many challenges in mobile computing

- Datacenters
  - Computation at very large scales
  - 20 petabytes per month
  - Reliability & Security
- Proxies
  - Caching strategies
  - Efficient media recompression
  - Fast switching of live Skype traffic
- Clients
  - Localization
  - Power & continuous computation
  - Fast media / signal acquisition/playback
    - Audio, video, photos, biometrics, environment

# Hi, Mark, Can I

Application virtualization

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Cortana – Personal Assistant







Dog breed identification

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