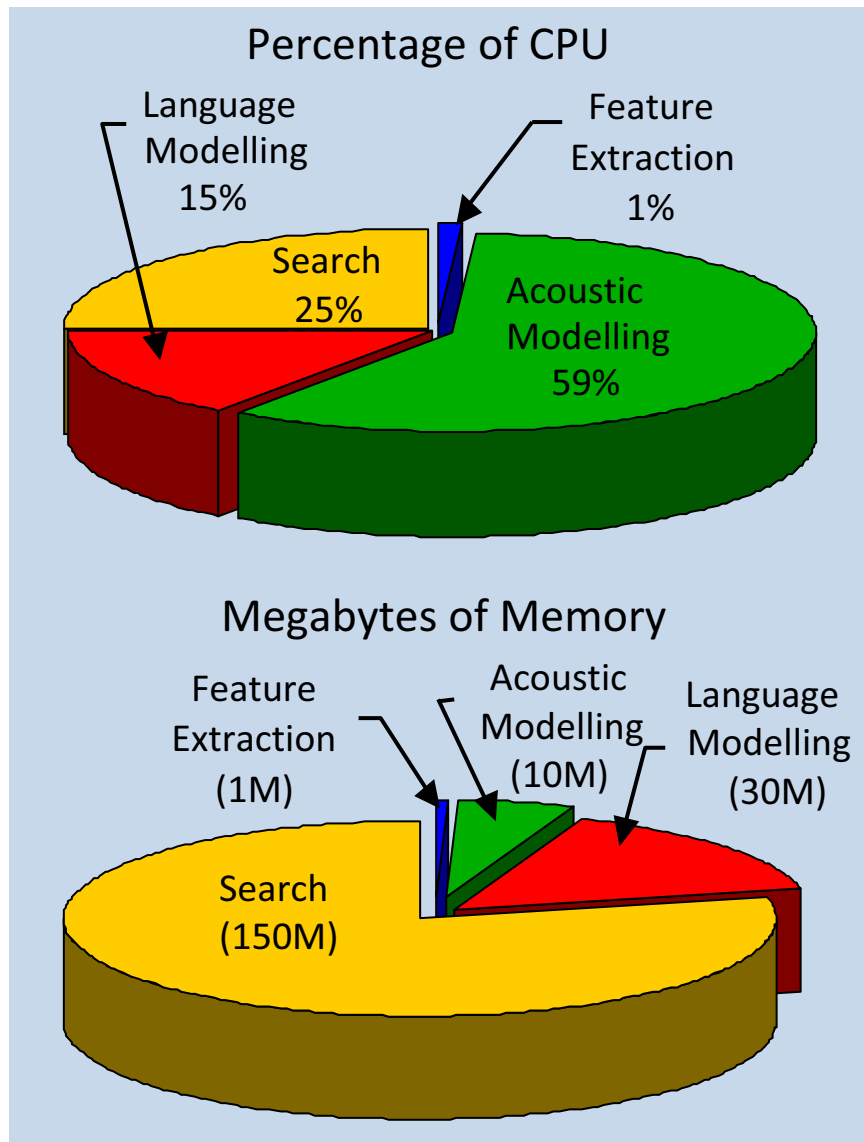


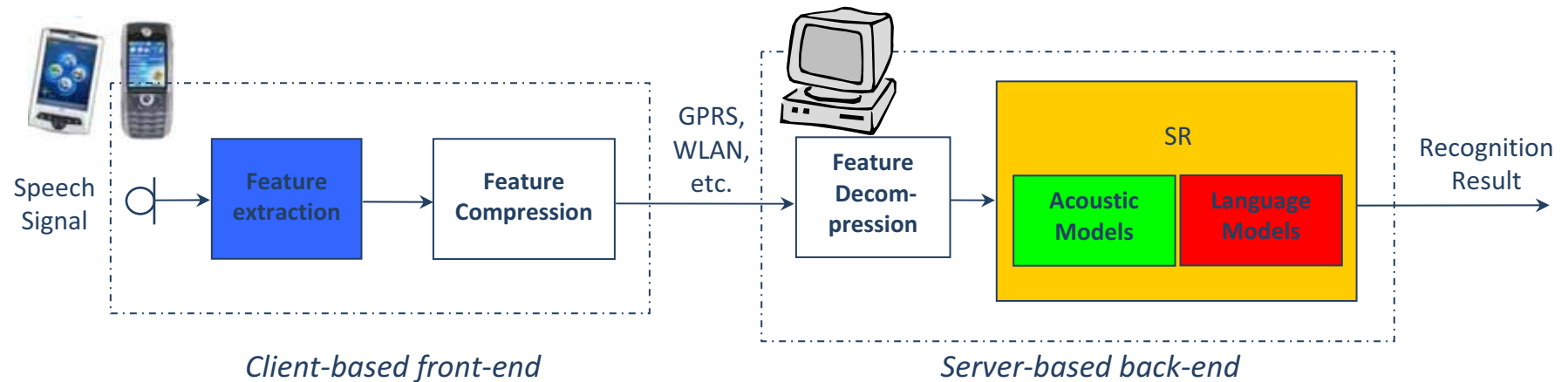
Optimising Client-Server Architectures for SLDS



Speech recognition – implementation issues:

- *Acoustic modelling* and *global search* are resource-critical
 - large amount of training data required for reliable model parameter estimation
 - typical large vocabulary speech recognition systems have about 10M free parameters
- However, user environment imposes hardware limitations
 - Tying, smoothing and interpolation
 - Distributed architecture and client-server based solutions

Distributed Speech Recognition



- Hardware limitations (e.g. on mobile devices) increasingly important
- Speech Recognition (SR) **distributed** between *client* and *server*
- Distributed architecture
 - access to **large vocabulary** SR systems even for less powerful devices
 - easy **update and maintenance** of the centralized SR system
 - access to **private and personalized** databases/language models
- Powerful and cost effective data transmission to the SR back-end

- D. Zaykovskiy, A. Schmitt: *Java to Micro Edition Front-End for Distributed Speech Recognition Systems*, IEEE International Symposium on Ubiquitous Computing and Intelligence (UCI'07), 2007.

- D. Zaykovskiy: *Survey of the speech recognition techniques for mobile devices*, SPECOM, 2006.