Towards usable authentication on mobile phones: An evaluation of speaker and face recognition on off-the-shelf handsets

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Disclaimer

This slide set is only meant for visual support during the presentation, and should not be used for reference purposes before or after the presentation.

For reference, please read the paper, not the presentation.

http://www.wired.com/wired/archive/11.09/ppt2.html
User authentication on mobile phones...

... is difficult because it should be:

- secure
- quick
- unobtrusive
- robust
- fun
- and much better than the one published by <the other company> a few weeks ago.
A really new idea: why not try biometrics?
## Results for speaker recognition

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<thead>
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</tbody>
</table>

**Features:** Mel frequency cepstral coefficients (MFCC)

**Classifier:** simple Vector Quantization (VQ) with k-means clustering for training

**Hardware for evaluation:** HTC Desire HD, 8kHz, 8 bit quantization

**Training set:** 60 seconds with same text for all speakers

**Testing set:** 15 seconds with different text for each speaker

**Details:** in the paper
Face recognition optimized for phones

Results with ORL database

- **Motivation**
- **Speaker recognition**
- **Face recognition**

<table>
<thead>
<tr>
<th>Num. training img.</th>
<th>Recognition rate %</th>
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<td>200</td>
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</table>

- **Comparison**
  - **Eigenfaces**
  - **DCT-based**

2012-06-18  Face and Speaker Recognition on Android  Rene Mayrhofer 7
Results with Caltech database

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<th>Num. training img.</th>
<th>Eigenfaces</th>
<th>DCT-based</th>
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<td>259</td>
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</tr>
</tbody>
</table>
There can be more then one!

Biometric authentication on mobile phones is **hard**

Why not use an arbitrary number of them together (e.g. gait recognition), driven by the application needs?

Framework for multi-method authentication and implementations for speaker and face recognition on Android online at https://gitorious.org/android-user-auth
Thank you for your attention!

Publications:  http://www.mayrhofer.eu.org/publications
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        rene@mayrhofer.eu.org

OpenPGP keys:  0x249BC034 (new) and 0xC3C24BDE (old)
717A 033B BB45 A2B3 28CF B84B A1E5 2A7E 249B C034
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