Demo of UIWear: Easily Adapting User Interfaces for Wearable Devices

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Wearable Devices and Apps

Wearable devices (i.e., smartwatches) are becoming a major growth sector for computing...

Most wearable apps are companion apps

78 of top 100 smartwatch apps in market are companion apps in our study

Spotify, iHeartRadio, BandLab

Companion App model

Spotify companion app retools UI from the smartphone app

Specifying UI Design

Developer writes a simple meta program for UI placement

UIWear creates a new companion app!

Goal

Easily build companion apps with minimal developer effort

Challenges

- Extract the logical model of the UI for cross-device interactions
- Perform UI synchronization even when the app is in the background

Idea

Decouple UI design from UI management

Developer writes a simple meta program for UI placement

UIWear creates a new companion app!

Spotify app on smartphone

Spotify companion app on smartwatch

Writing a companion app is extremely tedious

Lines Of Code (LoC)

UIWear Better or Equal

Spotify original

Spotify UIWear Wearable APP

Save Developer Effort

<table>
<thead>
<tr>
<th>Companion LoC</th>
<th>Metaprogram LoC</th>
</tr>
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<tbody>
<tr>
<td>10215</td>
<td>47</td>
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User Study for 20 wearable apps

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Look and Feel</th>
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<tbody>
<tr>
<td>78%</td>
<td>74%</td>
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Spotify Metaprogram

UIWear Stub

UIWear Better or Equal

UIWear Compiler

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