Tutorial 1: Android and Pixel Haptics APIs

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Android 16 significantly enhances haptic feedback via a new cross-device API supporting Piece-Wise Linear Envelopes (PWLE) for precise control over amplitude and frequency. This moves beyond traditional simple vibrations, enabling more expressive, perceptually rich haptic effects that perform consistently across the Android ecosystem. This workshop provides a comprehensive exploration of the new PWLE-based APIs, delving into its perception-driven design principles and the API's basic and advanced capabilities. Participants gain valuable hands-on experience composing diverse haptic effects using predefined primitives and custom PWLE sequences, working directly with examples on Pixel devices. Additionally, a Pixel-specific API extension that enables real-time PWLE effect generation will be introduced. This is a powerful tool for interactive applications and dynamic feedback. The session is highly interactive, with live demonstrations, open-source code samples, and dedicated time for attendees to design and evaluate their own haptic effects on Pixel phones.