

## the review of mobile advertisement privacy (by lee)

Online advertisement privacy had been well studied, while little research explores mobile ad privacy, especially in terms of what user information is being collected to push personalized ad. This paper had studied how user information is utilized by ad providers for ad personalization on mobile devices. The authors had investigated if in-app advertisements can be a channel for leaking user information collected by ad networks to apps hosting these advertisements.

Firstly, the paper had collected ground truth demographic data from more than two hundred real users and tested the correlation between the demographic data with advertisements observed by each volunteer user. This paper had adored several methods to overcome some noise, such as blank Android app, and secure VPN connection. Also, the landing URL extraction and post processing are be applied to analysis of ad features. After getting the dataset, this paper had studied interest profile based personalization and demographics based personalization. At the last, this paper utilized different machine learning algorithms to mine privacy leakage according to the personalized mobile ads. And the results demonstrated the possibility of leaking user's sensitive personal information through personalized mobile ads to third-party app developers. In this paper, it had proposed the root cause of the studied privacy leak from personalized ads to the hosting application is the lack of isolation between the ads and the app and give some countermeasures.

Although this paper had many limitations, for instance, the size of the dataset is not large enough, the volunteers did not come from different places, and if the choice of application can show diversity, how to process noise data and etc. Despite it, This paper is still a good work. Because it first analyzed the privacy leakage of mobile ad through both interests and demographics and put forward a attack based on this kind of personalized mobile ad. Apart from this, it had pointed the root cause of this privacy leakage, which may can arise more research about how to defend against privacy leakage in personalized mobile in-app ads.