PREDICTING SCREEN CONTENT USING ACOUSTIC SIDE CHANNELS

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A Thesis

in

Computer and Information Science

Presented to the Faculties of the University of Pennsylvania in Partial Fulfillment of the Requirements for the Degree of Master of Science in Engineering

2018

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ACKNOWLEDGEMENT (optional)

ABSTRACT

PREDICTING SCREEN CONTENT USING ACOUSTIC SIDE CHANNELS

We studied acoustic emanations from computer screens and used them to obtain information about content displayed on the screens. Generally, these acoustic emanations are inaudible to the human ear but can easily be picked up by microphones built into screens, webcams or cellphones. These devices may inadvetantly share this acoustic noise with a third party during videoconference or cellular calls or through archived recordings. It is also possible to record these sounds using a parabolic microphone over a distance of 10m. Using the acoustic noise emanated by the screens we were able to perform attacks like detecting on-screen text, detecting input into virtual keyboards and recognising websites browsed by a third party during a conference call.

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The physical implementation of computing systems affects it's environment in certain ways. Often these physical effects / emanations may esult in leaking information about the system itself. Physical side-channel attacks use this phenomenon to violate security of various cryptographic implementations or extract unauthorised information.

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