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Identification of Pressed Keys by Time Difference of Arrivals of Mechanical Vibrations

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Hae Yong Kim was born in South Korea in 1964 and migrated to Brazil in 1975. He received the third highest score in the entrance exam to the University of São Paulo (USP), among about 11000 candidates to Sciences and Engineering, and has graduated in Computer Science in 1988 with the best average scores. He received M.Sc. in Applied Mathematics (1992) and Ph.D. in Electrical Engineering (1997), both from USP. He has lectured at USP since 1989, and is currently an associate professor with the Department of Electronic Systems Engineering, Escola Politécnica, USP.

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Highlights

- We show a new physical vulnerability of commercial pinpads.
- We could infer the pressed PIN number within 96.4% of success.
- The certification processes does not address this new side-channel attack.
- Design flaws responsible for the vulnerability are spotted and explained.

Abstract

The possibility of finding the sequence of pressed keys in a mechanical keyboard is a serious

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