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Master's Thesis

**A Privacy-preserving Architecture for Parental Control Tools
for the Protection of Minors on Online Social Networks**

Antonis S. Papasavva

Limassol, May 2019

CYPRUS UNIVERSITY OF TECHNOLOGY
FACULTY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF ELECTRICAL ENGINEERING, COMPUTER
ENGINEERING AND INFORMATICS

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Approval Form

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ABSTRACT

Online social networks constitute an integral part of people's every day social activity. Specifically, OSNs such as Instagram, Twitter, and Facebook are especially prominent in the lives of adolescents, and they're not just for talking with friends: adolescents use social media to express themselves and find information. However, adolescents face a great number of threats on such online platforms like aggressive behavior and cyberbullying, sexual grooming, false news and fake activity, radicalization, and exposure of personal information and sensitive content.

There is a great need of parental control tools and Internet filtering techniques for the protection of the vulnerable groups that use online platforms. Existing parental control tools invade the privacy of adolescents, leading them to use other communication channels. In this work we design and implement a user-centric privacy-preserving advanced parental control tool considering the privacy of the individuals. In addition, we present a systematic process for designing and developing modern and state of the art techniques and system architecture to prevent minors' exposure to those risks and dangers.

Keywords: online threats, minors, cyberbullying, online social networks