# Web Mail is not Dead!
# It's Just Not Human Anymore

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## ABSTRACT

Many have noticed that personal communications have slowly moved from mail to social media and instant messaging platforms, especially with younger generation [6]. Yet Web Mail traffic continues to steadily grow. A paradox? Not really. We have observed at Yahoo Research that the nature of email traffic has significantly changed in the last two decades, and it is now dominated by machine-generated messages. These messages include hotel newsletters, from which users forgot to unsubscribe, repeated, and often annoying, notifications from a social media site, or critical information such as a flight e-ticket, a purchase invoice, or a telephone bill. In this talk, I first share some elements of this journey that led us to this critical finding that 90% of today's Web Mail is sent by automatic scripts [1]. I then discuss the challenges and opportunities this drastic change offers. First the key challenge: namely, the need for Web mail services to revisit their usage assumptions and their traditional features in light of this change. An obvious example is the "reply" button being displayed by default below messages sent from a "no-reply@" sender. Another feature is mail classification, which has finally experienced some changes in the last few years, [4]. I then discuss the opportunities in this era of big data. One first insight is that messages that have been generated by a same script, share some semantic commonality. Being able to automatically cluster such messages, and map such clusters into "templates" brings great value for discovering meaning, for generalizing findings and predicting behaviors [5]. A second insight is that within this commonality, the differences bring even more value, which allows highlighting what makes individuals unique within a crowd. In particular we discuss extraction techniques that automatically identify these unique elements [2]. Yet, they also present a clear risk in terms of privacy and I describe the absolute need for guaranteeing k-anonymity in our mining techniques, [3]. I conclude by encouraging the research community to explore this new domain of Web mail search and data mining.

## BIOGRAPHY

Yoelle Maarek is VP of Research at Yahoo. Yoelle holds an engineering degree from the Ecole des Ponts et Chaussees, a DEA in Computer Science from Paris VI university and a PhD in Computer Science from the Technion. Upon graduating, she joined IBM Research first in the US then in Israel, eventually becoming an IBM Distinguished Engineer. She later joined Google, as its first engineer in Israel and opened the Haifa engineering office. Her team there developed several notable features including Suggest, the Google query completion service. She returned to research, upon joining Yahoo, where she today serves as site manager of the Haifa office and guides the research organization of Yahoo worldwide. She has been serving in various senior roles at most of the recent SIGIR, WWW and WSDM conferences. She is a member of the Technion Board of Governors, and was inducted as an ACM Fellow in 2013.

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