

# CS 3001-C: Computing, Society, and Professionalism

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# Week 12: Algorithmic Surveillance

## March 27, 2023

Recorded lecture; no in-  
person class on  
March 29, 2023





EMMA WATSON TOM HANKS

# THE CIRCLE

KNOWING IS GOOD.  
KNOWING EVERYTHING IS BETTER.

4.28.17

NATIONAL



# Facebook Increasingly Reliant on A.I. To Predict Suicide Risk

November 17, 2018 · 5:00 AM ET

Heard on [All Things Considered](#)



MARTIN KASTE



4-Minute Listen

+ PLAYLIST



Privacy and ethics violations  
lie in the backdrop of  
surveillance

# Promises of technology and the Internet

Engineering the public: Big data, surveillance  
and computational politics  
by Zeynep Tufekci

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However, big data also needs to be examined as  
a political process involving questions of power,  
transparency and surveillance



*Computational politics* by  
Tufekci et al.

Computational politics:  
Contrasting yesterday and today

# Engineering the Public - Tufekci

1. The rise of big data
2. The shift away from demographics to individualized targeting
3. The opacity and power of computational modeling
4. The use of persuasive behavioral science
5. Digital media enabling dynamic real-time experimentation
6. The growth of new power brokers who own the data or social media environments

### 3. Power of computational modeling

## Mining Facebook Data for Predictive Personality Modeling

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### Abstract

Beyond being facilitators of human interactions, social networks have become an interesting target of research, providing rich information for studying and modeling user's behavior. Identification of personality-related indicators encrypted in Facebook profiles and activities are of special concern in our current research efforts. This paper explores the feasibility of modeling user personality based on a proposed set of features extracted from the Facebook data. The encouraging results of our study, exploring the suitability and performance of several classification techniques, will also be presented.

### Introduction

Social networks have become widely-used and popular mediums for information dissemination as well as facilitators of social interactions. Users' contributions and activities provide a valuable insight into individual behavior, experiences, opinions and interests. Considering that personality, which uniquely identifies each one of us, affects a lot of aspects of human behavior, mental processes and affective reactions, there is an enormous opportunity for adding new personality-based qualities to user interfaces. Personalized systems used in domains such as, e-learning, information filtering, collaboration and e-commerce could greatly benefit from a user interface that adapts the interaction (e.g., motivational strategies, presentation styles, interaction modalities and recommendations) according to user's personality. Having captured past user interactions is only a starting point in explaining the user behavior from a personality point of view.

Several well studied personality models have been proposed, the Big Five model established as the most popular

one (Goldberg 1992). Regularity in someone's behavior over time and situations uniquely identifies her personality type along Big Five dimensions: Openness to experience, Neuroticism, Extraversion, Agreeableness and Conscientiousness.

This research builds upon previous interdisciplinary research works regarding personality as it pertains to the design of intelligent interactive systems. The new communication technologies have brought more information to consider, though the process of their utilization is far from straightforward. Intelligent technologies are expected to play a prominent role in bringing these data to a new level of usability.

A variety of Facebook variables were expected to play a prominent role in establishing appropriate context for our particular investigations. Facebook profiles and activities provide valuable indicators of user's personality, revealing the actual, rather than idealized or projected personality (Back et al. 2010). Our research has two interconnected objectives: (1) to identify the relevant personality-related indicators that are explicitly or implicitly present in Facebook user data; and (2) to explore the feasibility of predictive personality modeling to support future intelligent systems.

We hypothesized that increasing the relevance of what is included in the model, and considering features drawn from a variety of sources may lead to better performance of the classifiers under investigation. The choice to include a feature was based on whether the previous research had underlined the importance of such a choice and its relevance to the objectives of this research. Our research is currently focused on investigating the suitability and performance of various classification techniques for personality modeling.

## 4. Persuasive behavioral science

# **Social bots distort the 2016 U.S. Presidential election online discussion**

**by Alessandro Bessi and Emilio Ferrara**

## **Abstract**

Social media have been extensively praised for increasing democratic discussion on social issues related to policy and politics. However, what happens when this powerful communication tools are exploited to manipulate online discussion, to change the public perception of political entities, or even to try affecting the outcome of political elections? In this study we investigated how the presence of social media bots, algorithmically driven entities that on the surface appear as legitimate users, affect political discussion around the 2016 U.S. Presidential election. By leveraging state-of-the-art social bot detection algorithms, we uncovered a large fraction of user population that may not be human, accounting for a significant portion of generated content (about one-fifth of the entire conversation). We inferred political partisanship from hashtag adoption, for both humans and bots, and studied spatio-temporal communication, political support dynamics, and influence mechanisms by discovering the level of network embeddedness of the bots. Our findings suggest that the presence of social media bots can indeed negatively affect democratic political discussion rather than improving it, which in turn can potentially alter public opinion and endanger the integrity of the Presidential election.



**The Cambridge  
Analytica Files**  
Cambridge Analytica

# Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach

**Whistleblower describes how firm linked to former Trump adviser Steve Bannon compiled user data to target American voters**

- **'I made Steve Bannon's psychological warfare tool': meet the data war whistleblower**
- **Mark Zuckerberg breaks silence on Cambridge Analytica**



## 5. Experimental science in real-time environments

## 6. Power of platforms and algorithmic governance

# 6. Power of platforms and algorithmic governance

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Letter | Published: 12 September 2012

## A 61-million-person experiment in social influence and political mobilization

Robert M. Bond, Christopher J. Fariss, Jason J. Jones, Adam D. I. Kramer, Cameron Marlow, Jaime E. Settle & James H. Fowler 

*Nature* **489**, 295–298(2012) | [Cite this article](#)

**10k** Accesses | **872** Citations | **1571** Altmetric | [Metrics](#)

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### Editorial Summary

#### An off-line side to online social networking

Online social networks are everywhere. They must be influencing the way society is developing, but hard evidence is scarce. For... [show more](#)

Avoiding being subject to computational politics?

# Two case studies

# Automatic Crime Prediction using Events Extracted from Twitter Posts

Xiaofeng Wang, Matthew S. Gerber, and Donald E. Brown

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## Once Upon a Crime: Towards Crime Prediction from Demographics and Mobile Data

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# POLICING THE FUTURE

In the aftermath of Ferguson, St. Louis cops embrace crime-predicting software

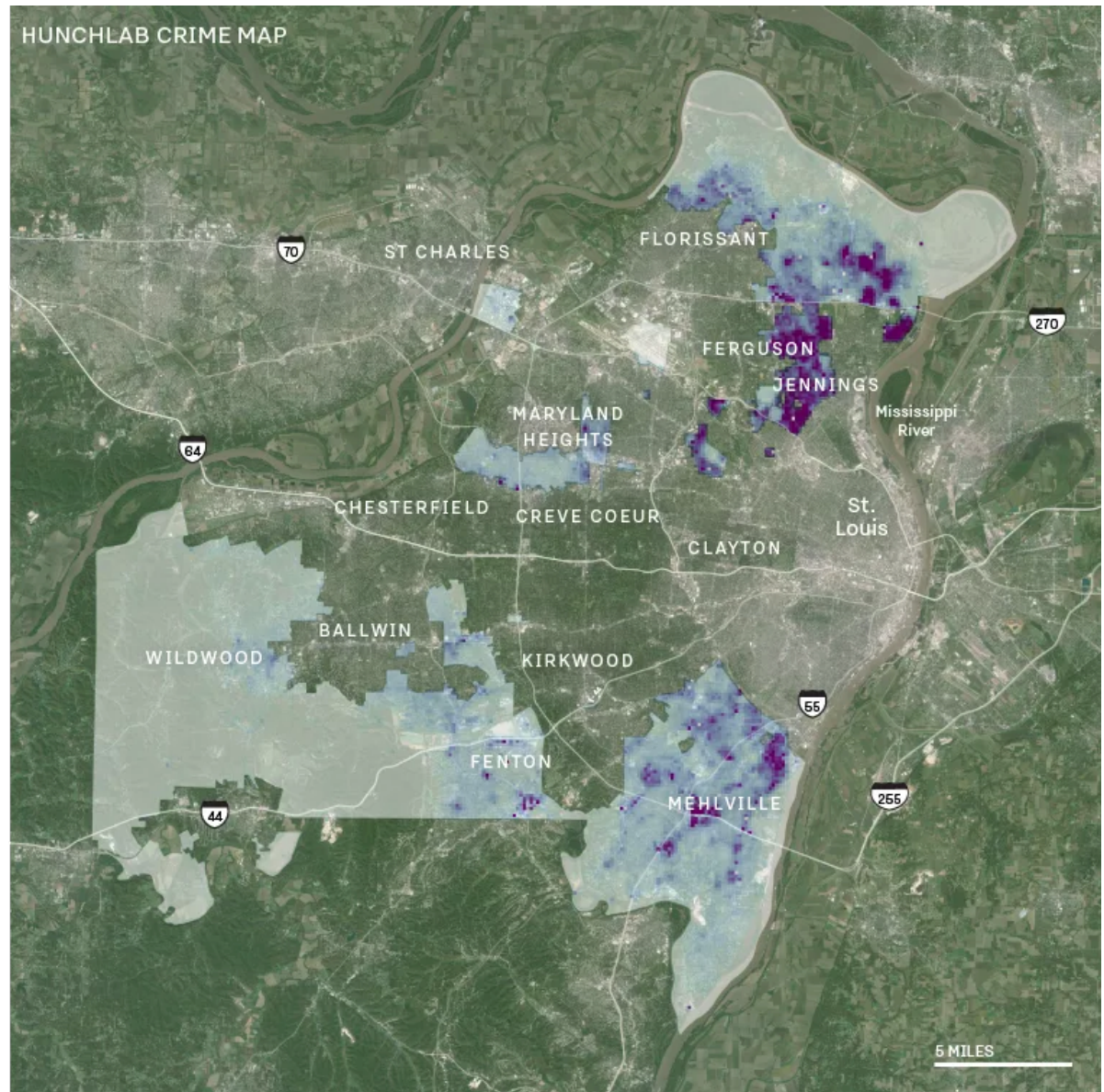
**By Maurice Chammah, with additional reporting by Mark Hansen**

**Photography by Whitney Curtis**

**Just over a year** after Michael Brown's death became a focal point for a national debate about policing and race, Ferguson and nearby St. Louis suburbs have returned to what looks, from the outside, like a kind of normalcy. Near the Canfield Green apartments, where Brown was shot by police officer Darren Wilson, a sign reading "Hands Up Don't Shoot" and a mountain of teddy bears have been cleared away. The McDonald's on West Florissant Avenue, where protesters nursed rubber bullet wounds and escaped tear gas, is now just another McDonald's.

Half a mile down the road in the city of Jennings, between the China King restaurant and a Cricket cell phone outlet, sits an empty room that the St. Louis County Police Department keeps as a substation. During the protests, it was a war room, where law enforcement leaders planned their responses to the chaos outside.







# The Ethical Problem...

Do you think use of softwares like HunchLab can indeed minimize unjust police brutality incidents toward people of color?



Technology

# Colleges are turning students' phones into surveillance machines, tracking the locations of hundreds of thousands

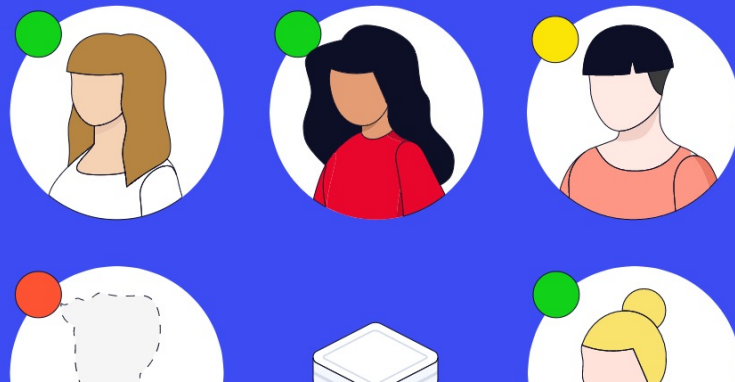
Solutions

Success Stories

Spotter

Sign In

Request A Demo



An automated  
attendance  
monitoring and  
early alerting

# StudentLife: Assessing Mental Health, Academic Performance and Behavioral Trends of College Students using Smartphones

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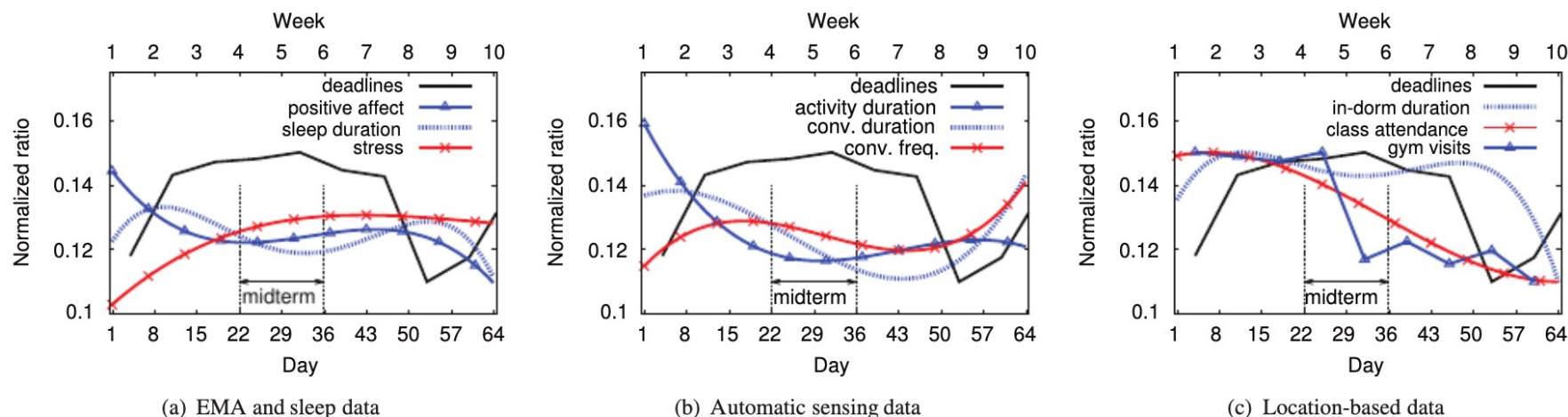


Figure 5. Dartmouth term lifecycle: collective behavioral trends for all students over the term.



Technology

# Parkland school turns to experimental surveillance software that can flag students as threats



# Thought Point...

Contrasting the three types of school/college student behavioral monitoring: 1) Attendance surveillance; 2) Mental health surveillance; 3) Violence surveillance

- Is one less or more (un)ethical than the other? Which one and why?
- Could we use an ethical theory to analyze it?