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CS349

SURVEILLANCE AND WHISTLE BLOWING

HISTORY OF SURVEILLANCE

▸ "Enlightened rulers and good generals who are able to obtain intelligent agents as spies are certain for great achievements." — Sun Tzu

▸ Spies and intelligence networks have historically been used across a multitude of civilizations

▸ Ciphers and codes common for transmitting sensitive information

  ▸ Caesar cipher named after Julius Caesar, who used it in his correspondence

▸ In such networks agents would:

  ▸ Target and monitor the activities of individuals

  ▸ Plant information/engage in activities to gather information

CIPHER BUREAU: ORIGINS OF US MODERN INTELLIGENCE

▸ Cipher Bureau of Military Intelligence created during WWI and headed by Herbert Yardley

  ▸ Used to break German codes during the war

  ▸ Aided diplomatic negotiations with Japan in 1922

  ▸ Used Western Union and other telegraph companies to gain information entering and leaving the country

▸ Secretary of State closed the agency in 1929

▸ In 1931 Yardley published activities of Cipher Bureau for US citizens and the world to see

OTHER AGENCIES FOLLOW…

▸ In 1930, US Army formed Signal Intelligence Service (SIS) for code-breaking outside of State Department

　　▸ Focused on monitoring the Japanese Empire

　　▸ Cracked Japan's Purple cipher and JN-25 code (used during Midway)

▸ President Truman reorganized SIS into the National Security Agency (NSA) in 1952

NSA'S COLD WAR ACTIVITIES

▸ Monitored correspondence of US citizens under program called Project SHAMROCK

▸ Monitored communications of civil rights leaders and opponents to Vietnam War under Project MINARET

▸ A 1967 program used to monitor suspected terrorists and drug traffickers expanded by later presidents to monitor political dissidents

▸ In 1978 Church Committee hearings led to Foreign Intelligence Surveillance Act (FISA) to set guidelines for what the NSA could collect and prevent warrantless surveillance

▸ NSA shrank in size after end of Cold War

SURVEILLANCE IN THE TURN OF THE CENTURY

▸ FBI launched Carnivore, a customized packet sniffer, to monitor Internet traffic and use

▸ After 9/11, NSA launched data mining program to look through electronic data

  ▸ Under President George W Bush, NSA also authorized to monitor phone calls and e-mails of US citizens without a warrant

  ▸ Warrantless wiretap program ended in 2007 due to public pressure and questionable legality

▸ FISA Amendments Act of 2008 allows government agencies to monitor electronic communications of foreigners abroad

  ▸ President Obama extends Act by five years in 2012

  ▸ Reauthorized again for six years in 2018

▸ In 2013, NSA contractor, Edward Snowden, revealed PRISM program, allowing officials to collect material including search history, e-mail content, file transfers and live chats

  ▸ Done in collaboration with major corporations including Microsoft, Yahoo, Google, Facebook, YouTube, Skype, AOL, and Apple

INSTAPOLL: WHY IS THIS SORT OF SURVEILLANCE DIFFERENT?

▸ Why might modern surveillance be different than earlier forms of surveillance?

INFORMATION IN THE INFORMATION AGE

▸ Understanding of information, and the transmission of information, rapidly developed in the 20th Century

▸ Amount of information in the world also exploded

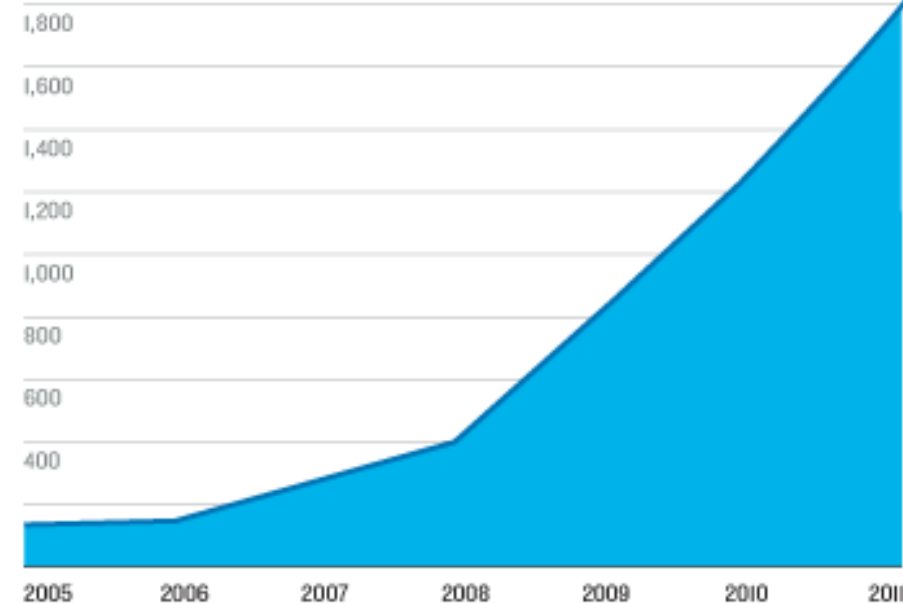 ▸ But not necessarily any good way to process so much data

65 billion
Location-tagged payments made in the U.S. annually

154 billion
E-mails sent per day

87%
U.S. adults whose location is known via their mobile phone

Digital Information Created Each Year, Globally

2,000 BILLION GIGABYTES
1,800
1,600
1,400
1,200
1,000
800
600
400

2005 2006 2007 2008 2009 2010 2011

2,000%
Expected increase in global data by 2020

111 Megabytes
Video and photos stored by Facebook, per user

75%
Percentage of all digital data created by consumers

Sources: IDC, Radicati Group, Facebook, TR research, Pew Internet

DEEP LEARNING

▸ In 2012, deep learning added more layers to the traditional convolutional neural network approach for classifying information

▸ Extremely good results with enough data

▸ Result is rapid improvements in the areas of machine learning, natural language processing, computer vision, and pretty much anything that requires pattern recognition

DEEP LEARNING IN SURVEILLANCE

▸ Facial recognition

▸ Behavioral recognition

▸ Object identification

▸ Large data sets that can be processed without human assistance…

WHAT DOES THIS MEAN?

▸ What does this mean for you as a computer scientist?

▸ What does this mean for societies worldwide?

▸ What does this mean laws, enforcement, and future systems of government?

HONG KONG PROTESTS

▸ Facial recognition is key for both sides

   ▸ Police want information on protesters and access to protesters' phones

   ▸ Protesters doxx police officer information including home address, friends, and family

▸ Possibly first "real world" application of disrupting machine learning techniques via masks, face paint, etc

OTHER EXAMPLES?

SIDE NOTE: GUN TRACING

WHISTLEBLOWING

▸ Whistleblowing is when someone in a company reports immoral or illegal activities to an outside organization

　　▸ Publicizes company's actions to general public

　　▸ Allows for government fines or prosecution if laws or regulations are being violated

　　▸ Whistleblowers protected from company retaliation by federal and often state laws

WHAT ABOUT WHISTLEBLOWING AGAINST THE GOVERNMENT?

▸ Whistleblower Protection Act (WPA) states that the government cannot take "adverse personnel actions" against employees who engaged in "protected disclosures to specified persons"

  ▸ Personnel actions includes firing, demoting, and cutting pay but offers no protection against criminal prosecution

  ▸ Specified persons means, in the case of classified information, only includes certain officials

▸ Does not apply to anyone in a confidential, policy-determining role, or apply to anyone in the FBI, CIA, or NSA

▸ The Intelligence Community Whistleblower Protection Act (ICWPA) permits disclosure of certain information to agency's Inspector General (IG) but does not protect against retaliation

WHISTLEBLOWING AGAINST THE MILITARY?

▸ Military Whistleblower Protection Act (MWPA) provides similar protections as the IWPA but for military personnel

   ▸ Disclosures should go through Inspectors General in the Department of Defense

   ▸ Nominally provides protections against retaliation and reprisals

▸ IGs often do not acknowledge connection between previous whistleblowing and reprisal

▸ Incidentally the Nuremberg Principles do not allow for the "superior orders" defense in crimes under international law

CHELSEA MANNING

▸ In 2010, Pfc. Manning, currently deployed in Iraq, released classified and sensitive documents relating to the conduct of US soldiers in Iraq and Afghanistan to international watchdog organization, WikiLeaks

  ▸ Revealed larger number of civilian casualties than US had reported

  ▸ Included footage of the 2007 Baghdad airstrikes that killed two Iraqi war correspondents working for Reuters

▸ In May 2011, Manning charged by US Army with 22 counts of unauthorized possession and distribution of secret diplomatic and military documents

  ▸ Received a 35-year sentence

▸ In 2017, President Obama pardoned her three days before leaving office

EDWARD SNOWDEN

▸ In March 2013, Snowden, a contracted NSA analyst, fled the US to Hong Kong

▸ Leaked information to the press on NSA's Prism program as well as British agency, GCHQ, which was tapping fiber-optic cables under the codename Tempora

▸ Revealed spying not just against US and UK citizens but other international states, including China, Germany, Brazil, and Mexico

▸ Snowden currently in exile in Russia

PATRIOTS OR TRAITORS?

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