Advisen's Cyber Risk Insights Conference





Welcoming Remarks Stacie Lilien





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Co-Chair Opening Remarks







Joe DePaul Willis Towers Watson





Garin Pace AIG



Opening Keynote Alex Kogan





CEO Philometrics

Cambridge Analytica Myths, Facts, and Lessons Learned







Facebook-Cambridge Analytica: A timeline of the data hijacking scandal

US & WORLD \ TECH \ FACEBOOK

Mark Zuckerberg apologizes for Facel privacy scandal in full-page newspape

CEO Mark Zuckerberg says he's sorry for the breach of trust

By Nick Statt | @nickstatt | Mar 25, 2018, 11:46am EDT

Technology **Facebook Faces Massive Damages in Cambridge Analytica Suit**

Cambridge Analytica: links to Moscow oil firm and St Petersburg university

Data company gave briefing to Moscow firm Lukoil, and the lecturer who developed the crucial algorithm worked for St Petersburg university

The Cambridge Analytica data breach also harvested some people's private Facebook messages

Facebook will no longer allow third-party data for targeting ads

The company is clamping down on potentially vulnerable ad practices

How academic at centre of Facebook scandal tried - and failed - to spin personal data into gold

Facebook limits ad targeting after Cambridge Analytica data leak

essica Guynn, USA TODAY Published 12:49 a.m. ET March 29, 2018 | Updated 1:38 p.m. ET March 29, 2018

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

Facebook ignored staff warnings about 'sketchy' **Cambridge Analytica in September 2015**

Cambridge Analytica boasts of dirty tricks to swing elections











How do I fit into this mess?



Cambridge Analytica: how the key players are linked









CAMBRIDGE ANALYTICA & FACEBOOK DATA PARTNERS ALEKSANDR KOGAN University of Cambridge (U.K.) Research Associate & Neuroscience Lecturer









Quandary.





"If men define situations as real, they are real in their consequences" - Thomas theorem









Our Data Makes Us Different

facebook	Facebook Social Network (Graph Database Containing 30M Individuals)	2 Odatatrust	Nationwide Voter Files From L2 And Datatrust (~50 Data Points For 160M Individuals)
GOP.	In-Depth Republican Primary Focused Surveys (150K)	ARISTOTLE Non-Ville Room**	Nationwide Enriched Credit File From Aristotle (400 Data Points For 220M Individuals)
(infogroup	Emails From Infogroup (60M)	acxi@m. (infogroup	Nationwide Consumer Data From Acxiom And Info (~500 Data Points For 160M Individuals)
Odatatrust	Emails From Datatrust (26M)	MAGELLAN	Election Return Results From Magellan (~20 Data Points For National Census Tracks)
FORAMERICA	Foramerica Member Data (14.6M Post Comments, 240M Post Likes Across 31M Users)		Psychographic Inventories (10 Data Points For 30M Individuals)
3	Facebook Likes (570 Data Points For 30M Individuals)		



Total Data = 2,000 - 5,000 Data Points Per Registered Voter In The U 6.4 Tb For The Mongodb & 2.5Tb For Mysql = 8.9 Tb In Total





Neuroticism

Agreeableness





nioy ences?

Highly accurate models!

Do they prefer stans and order?

OCEAN: Personality Traits

The OCEAN five-factor personality model defines different traits in personality across demographics and all methods of observation









Do they like spending time with others?

Do they put people's needs before theirs?

Do they tend to worry a lot?



TRUMP PENCE New York, New York MAKE AMERICA GREAT AGAIN!





The Data That Turned the World Upside Down

How Cambridge Analytica used your Facebook data to help the Donald Trump campaign in the 2016 election.



Russia!

Mr. Christopher Wylie

Weapons grade psy-ops!









This is not good.



Cambridge Analytica

::





Facebook to be fined \$5bn for **Cambridge Analytica privacy violations** -reports

The \$5bn fine would be the largest ever levied by the Federal Trade Commission against a technology company

SEC Facebook fine sparks fresh questions UK fines Facebook £500,000 for failing about Cambridge Analytica from UK to protect user data **Parliament**

Politicians in Britain say the evidence Facebook provided to the SEC and to them doesn't match up.



Congress grills Facebook CEO over data misuse - as it happened

Mark Zuckerberg gave testimony to Senate committees in light of revelations that Cambridge Analytica used Facebook data to influence US voters

Decision by information commissioner comes after Cambridge Analytica scandal

Mr. Mark Zuckerborg



BREAKING NEWS TRUMP-LINKED FIRM CLOSING AFTER FACEBOOK DATA HARVESTING CONTROVERSY

2571373







Guardian



From the Academy Award nominated filmmakers behind THE SQUARE

HE





A NETFLIX ORIGINAL DOCUMENTARY



Christopher Wylie





And me?










CAMBRIDGE ANALYTICA & FACEBOOK DATA PARTNERS ALEKSANDR KOGAN University of Cambridge (U.K.) Research Associate & Neuroscience Lecturer















Truth 1: Cambridge Analytica had only a few data points on every American





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I gave them 4 likes for 30 million people...





So how did we get to 570 likes?









Person 1	1
Person 2	
Person 3	
Person 4	1
Person 5	
Person 6	
Person 7	
Person 8	
Person 9	
Person 10	1
Person 11	
Person 12	1
Person 13	
Person 14	
Person 15	













There were 150 million different pages!





Truth 2: We built highly inaccurate personality models.





Personality predictions are confusing.



Arbitrary measurement scale



$$r = \frac{1}{n-1} \sum \left(\frac{x - \overline{x}}{S_x} \right) \left(\frac{y - \overline{y}}{S_y} \right)$$

Correlations are non-intuitive measures of accuracy





Let's build some intuitions!



























Instead of personality, let's talk about age.





Instead of correlations, let's use mean absolute error.











Random guess: 25 years off

Everyone is 40: 17 years off













Everyone is 40: 17 years off

Predicted (adjusted) age: 20 years off

Predicted age: 16 years off

Predicted age













Everyone is 40: 17 years off

Predicted (adjusted) age: 11 years off

Predicted age: 10 years off

Predicted age



R = 0.80

Advisen









\land Advisen









Predicted if people are low, moderate, or high

All 5 traits right...for 1% of people

All 5 traits wrong...for 5% of people



Truth 3: Persuading people in politics is extremely hard







The Minimal Persuasive Effects of Campaign Contact in General Elections: Evidence from 49 Field Experiments

JOSHUA L. KALLA University of California, Berkeley DAVID E. BROOCKMAN Stanford Graduate School of Business





Real political strategy is focused on activation, not persuasion.













Don't be born Russian.



HITHZFLA BLLS: Weight

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RATORY

AN'S RESEARCH, OGY OF HUMAN THE CAPITALIST EMOTIONAL EMOTIONS AND Y OF INTRA- AND YS BE VIGILANT US LEADER USES AL APPROACHES CAL,

YSIOLOGICAL MULTITUDE OF S, DAILY EXPERI RECORDING,) AND DISTINCT JR ATTACK ON PROSOCIALITY, , AND POSITIVE MBER, TOGETHER COMMON FOE!





Why was Cambridge Analytica the biggest tech scandal ever?





Theory 1: Biggest data collection?





50 million is on the small end for scandals.





Theory 2: Politics is the red line?





Obama, Facebook and the power of friendship: the 2012 data election

A unified computer database that gathers and refines information on millions of potential voters is at the forefront of campaign technology - and could be the key to an Obama win





Theory 3: Something else we did?





First Guardian story was in December 2015




My Answer: Context and consequences.



Russian bots retweeted Donald Trump 10 times more than Hillary Clinton in the last weeks of the campaign

The bots retweeted Trump nearly 500,000 times in 10 weeks

The Propaganda Tools Used by Russians to Influence the 2016 Election

By ALICIA PARLAPIANO and JASMINE C. LEE FEB. 16, 2018

Russian trolls created Facebook events seen by more than 300,000 users

Mueller charges 13 Russians with interfering in US election to help Trump



Facebook admits to the Senate that it recommended Russian propaganda to some users

Over 100 Charges, 34 People and 3 Companies: The Investigations Surrounding Trump, Explained

How Trump's 2020 campaign manager is connected to the Russia scandal

Brad Parscale is linked to a data firm that has become a focus of the Trump-Russia investigation.









Was the scandal good or bad for Facebook?





Facebook to be fined \$5bn for **Cambridge Analytica privacy violations** -reports

The \$5bn fine would be the largest ever levied by the Federal Trade Commission against a technology company

SEC Facebook fine sparks fresh questions UK fines Facebook £500,000 for failing about Cambridge Analytica from UK to protect user data **Parliament**

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Decision by information commissioner comes after Cambridge Analytica scandal



Facebook's biggest threat is competition, not regulation







Open networks

Low barrier to entry



Closed networks

High barrier to entry







Facebook now has a master defense against opening up its network.





Was the scandal good or bad for the public?





People much more interested in privacy now.





Should people be concerned about big data?





Big data is creepy.







You won't win if the public is emotionally against you.





A second concern of consumers should be invisible usage of data.





"If men define situations as real, they are real in their consequences" - Thomas theorem





Jobs

Insurance

Credit cards

Mortgage



College admissions

Visas





Companies buy data about you all the time.





They may (and are) using it to make decisions about you.





Weapons grade discrimination!





Companies will make decisions about you based on faulty logic.





Ecological Fallacy: Believing what is true for a group, is true for an individual.





Cambridge Analytica scandal might have made companies more likely to do this.





All of analytics is basically this.





"If men define situations as real, they are real in their consequences" - Thomas theorem





Making Inclusion and Equality a Priority in the Cyber Market





Making Inclusion and Equality a Priority in the **Cyber Market**











Joyce Trimuel CNA

Julian Waits Devo



The State of the Cyber Market: Current Trends and Future Predictions







The State of the Cyber Market: **Current Trends and Future Predictions**



Michelle Chia Zurich North America [Moderator]





Emily Simon Corning Incorporated



Theresa Purcell Kushner







Cyber Insurance Purchasing





"This is what I would want MY cyber policy to cover."









Claim is still being processed 16.7%

Very dissatisfied 3.33%

Somewhat dissatisfied 3.33%

Neither satisfied nor dissatisfied 3.33%

Somewhat satisfied 10%



Claims Satisfaction

Were you satisfied with the outcome of the claims process?





Supply Chain, continued...











CORNING

https://www.advisenItd.com/2019-Cyber-Guide-Survey



Morning Keynote







John McClurg **Blackberry Cylance**



Morning Break Coming up next... Track 1 Track 2 To Market, To Market: **Cyber Insurtech Investing Trends Underwriting and Pricing** Cyber risk in Today's World **Salon III** Salon II



Track 3 **Physical Fitness: Protecting Connected Objects from** Cyberattack **Salon IV**

Track 4 **Cost per Record:** What is Fact Vs Fiction? **Conference Level – Carnegie/Alvin**




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To Market, To Market: Underwriting and Pricing Cyber Risk in Today's World





To Market, To Market



David Lewison AmWINS [Moderator]



Erica Davis Guy Carpenter





Timothy Francis Travelers



Brian T. Robb CNA





- * \$1.5 Trillion of Cyber Crime Profits
- * \$6 Trillion of Cyber Crime Damages
- * Small businesses spend less than \$500 annually for cyber security.
- * \$76 billion in cryptocurrency used for criminal activity.
- * > 4 Billion records exposed so far in 2019





How big is the cyber market? < \$10 Billion of premium

Hypothetical limits exposed: \$25K X \$5M = \$125 B?







Pricing Trends by Size and Industry Coverage Trends Loss Trends Reinsurance Aggregation





Question: Is it sustainable???





Rise of the Mega-Fines: Accounting for Regulatory Action in Cyber Insurance





Rise of the Mega-Fines



Sean Hoar Lewis Brisbois [Moderator]



Gamelah Palagonia Willis Towers Watson







Noel Pearman AXA XL



Gregory Vernaci AIG



Join us at 1:15pm For an optional lunch session **Driving Efficiency in the Cyber Underwriting Process**



1 floor below on the Conference Level in the **Carnegie & Alvin Room**





Conference Luncheon Coming up Next...

Track 1 "When the Cyber **Claim Comes In"** Salon II

Track 2 "Session A – Comparing & Contrasting Cyber **Aggregation Models**"

Salon III



Track 3

"Reporting from the Front Lines" Salon IV

Track 4 **"Cyber Secondary Related Risk**" **Conference Level – Carnegie/Alvin**





When the Cyber Claim Comes In





When the Cyber Claim Comes In







Meredith Schnur Marsh [Moderator]

Michael Bruemmer Experian

Patrick Cannon **Tokio Marine Kiln**







Jeremy Gittler AXA XL

Josh **MacDonald Beazley**





Setting the Stage

- We are now regularly agreeing to million dollar ransomware claims within 24 hours!
- AXA XL: 20% of our breach claims involve insureds who report a claim, but then sweep the issue under the rug and take no action
- As more ransomware claims come in, more companies are doing their own limited consumer notification
- Deazley: 20% of claims are ransomware. For Q3 2019, 24% of those were confirmed to be caused by a vendor
- □ Insureds are not using panel breach coaches/vendors as often as you think
- The top 4 industry verticals for breaches YTD serviced by Experian were Healthcare, Financial Institutions, Retail/Hospitality and **Public Sector**
- Companies who have no plan, no practice and no guaranteed SLA's for consumer protection response services, pay 22-25% more (reactive vs proactive incident response planning)
- Output A construction of the second secon response miss their mandatory reporting deadlines twice as often as US only breaches















• An Insured chose not to notify, why was this a nightmare scenario

□ Trickbot, Ryuk....what happened?

A business interruption claim where the policy limit was exceeded and raised potential gap in cover (hint: property damage)



Real Life Examples!



Debunking the Myth



- The Extortion Economy: How Insurance Companies are fueling a **Rise in Ransomware Attacks**
- War Exclusion precludes coverage under Cyber insurance policies





Blurred Lines: The Wider Insurance Impact of Cyber Risk





Blurred Lines: The Wider Insurance Impact of Cyber Risk





Catherine A. Mulligan Aon [Moderator]





Chris Beck Milliman



Brad Gow Sompo International





Afternoon Break Coming up Next... Fireside Chat with Jim Sciutto **Chief National Security Correspondent & Anchor, CNN Newsroom**





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Cyber Insurtech Investing Trends





Cyber Insurtech Investing Trends









Tom Boltman Kovrr



Jonathan Kalman Eos Venture Partners



A Pen-tester's **Approach to Underwriting**





A Pen-tester's Approach to Underwriting



Geraldine Spry Estée Lauder [Moderator]





Asaf Lifshitz Sayata Labs



John Merchant Ascent





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Session A – Comparing and Contrasting Cyber Aggregation Models











Jim Blinn Advisen [Moderator]

Nick Beecroft CyberCube



Session A





Derek Blum RMS

Philip Rosace Guidewire Cyence





Cyber Aggregation



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Modeling Concepts

Impact or Loss





Mass Ransomware



WannaCry detections, 4 days after emergence



Scenarios









Mass Data Breach



Scenarios





Scenarios

Cloud Outage





We're having issues,

but we're working on it.







Scenarios

• IT Events







Session B – Comparing and Contrasting Cyber Aggregation Models









Jonathan Laux Aon [Moderator]



Oliver Brew CyberCube



Session B



Derek Blum RMS



Philip Rosace Guidewire Cyence


Sample Model Run

Scenarios Modeled

- Mass data breach
- Cloud outage
- Mass ransomware



Metrics Evaluated

- Probable Maximum Loss
 (PML) at 1 in 10, 1 in 100, 1 in 200
- Average Annual Loss (AAL)



Mock Portfolio

- 400 policies
- \$40.5 million premium
- \$3.0 billion aggregate limits
- 100% US risks
- \$7.5m average limits
- 20% primary / 80% excess
- \$55m median attachment on excess



Portfolio Composition (% of

EiHahdial)Services	35%
Manufacturing	11%
Retail Trade	9%
Healthcare	8%
Software and Technology	
Services	8%
Hospitality	6%
Business Services	5%
Utilities	4%
Wholesale Trade	3%
Licensed Professional Services	2%
Education & Research	2%
Other	5%





Mass Data Breach



1:10 PML



Model B Model C

1:100 PML

1:200 PML



Cloud Outage



1:10 PML







Mass Ransomware











1:100 PML

1:200 PML



Model A





Model B Model C



3 Scenarios Combined



1:10 PML



1:100 PML

1:200 PML



3 Scenarios Combined Industry Contribution to 1:200 PML

Exposure		Model A		Model B		Model C	
Aggregate							\$131.6
limits	\$3.0b	1:200 PML	\$90.2m	1:200 PML	\$73.5m	1:200 PML	m
Top Industries							
Financials	35%	Financials	29%	Financials	30%	Financials	30%
		Manufacturin					
Manufacturing	11%	g	23%	Retail	18%	Retail	28%
				Manufacturin		Manufacturin	
Retail	9%	Healthcare	8%	g	14%	g	19%
Healthcare	8%	_					





Loss (\$m)

3 Scenarios Combined Average Annual Loss Model A Model B Model C 7 5.82 6 5 3.86 3.82 4 3 2 0

AAL



Catastrophe Load (AAL / Premium)

Model A Model B Model C



Catastrophe Load



Afternoon Break Coming up Next...

Fireside Chat with Jim Sciutto Chief National Security Correspondent & Anchor, CNN Newsroom





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Physical Fitness: Protecting Connected Objects from Cyberattack





Physical Fitness





Marc S. Voses Goldberg Segalla [Moderator]

Jens Alkemper Steve Bergman Eric Rosenfeld FM Global RSA RedSeal









Emerging Threats: More Things to Keep You Awake





Emerging Threats





Anthony Hess Kivu [Moderator]

Shawn Fohs Ernst & Young







James Perry CrowdStrike Services

Michael Quinn Kroll





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Reporting From the Front Lines: Real-Life Tales from the War Against Cybercrime







Reporting From the Front Lines





Matt Cherian BitSight



Paige H. Adams Zurich [Moderator]





Evgueni Erchov Arete Advisors



Jennifer Coughlin Mullin Coughlin

Todd Hindman ID Experts





This Isn't Your Parents' Internet **Generational Differences Concerning Privacy and Cybersecurity**







This Isn't Your Parents' Internet





Doug Boykin Meredith Chiulli Willis Towers Watson OneTrust [Moderator]







James Burns CFC Underwriting

Erin Walters INSUREtrust





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Cost per Record: What is Fact vs Fiction?





Cost per Record: What is Fact vs Fiction?





Jim Blinn EVP, Client Solutions Advisen

Tulja Ganta Data Solutions Client Lead Advisen





Jean-Michel Plante BI Analyst III Business Intelligence The Co-Operators





The Spread of Data Breach Costs

Company	Average Cost of Data Breach	Cost per Record
Kaspersky Lab Researchers	\$1.41M	N/A
Hiscox	\$1.5M	N/A
IBM Security & Ponemon	\$3.92M	\$308
NetDiligence	\$604K	\$148







Industry view of Count of cases with 1M+ Affected Count









Driving Efficiency in the Cyber Underwriting Process





Prashant Pai Vice President – Cyber Verisk Analytics [Moderator]

Andrew **Kwon-Nakamura Cyber Pricing Actuary Zurich North America**



Lunch Session





Shiraz Saeed National Practice Leader – Cyber Risk **Starr Insurance** Companies

Kevin Sherry Cyber Practice Leader Everest Insurance







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Spencer Educational Foundation Board of Directors



Marya J. Propis

Senior Vice President Director of Distribution and Broker Partnerships All Risks, Ltd.



Fireside Chat

Ben Beeson Head of Insurance Arceo.ai





Jim Sciutto Chief National Security Correspondent & Anchor CNN Newsroom





Closing Remarks & Reception sponsored by CyberCube





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