The big data challenges of connectomics

Sourced from Jeff W Lichtman, Hanspeter Pfister, & Nir Shavit Presented by Albert Lee



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Nate Silver



Silver at South by Southwest, 2009

Born Nathaniel Read Silver

January 13, 1978 (age 37)^[1]

East Lansing, Michigan

Residence Manhattan, New York City[2]

Nationality American

Education A.B., Economics (2000)

Alma mater University of Chicago

Occupation Statistician, journalist

Employer ESPN

Known for PECOTA, FiveThirtyEight

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winning the Democratic Party's presidential nomination are ...

Nate Silver: Trump W... FOX News Radio (blog)-

Nate Silver: Donald Trump More Likely Nominee Than Bernie Sanders Jewocity.com (press release)

Jan 9, 2016

Th... I don't think his chances

are zero. You have to be very careful about saying they're

zero, but I think they're lower. than 20 [percent] or 25 percent.

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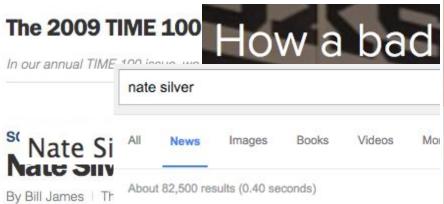
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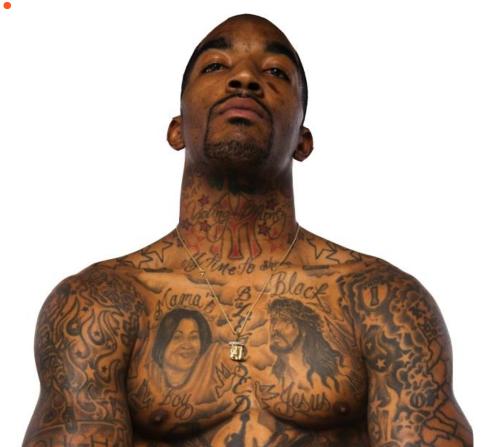


Who cares?

- Pecota
- <99% success rate
- Mainstream iconoclast?

Who is JR Smith?

Who is JR Smith?



Who is JR Smith?

- Tree lover
- Trey shooter
- Streaky



Who cares?

- Sports analytics
- Nate Silver
- Connectomics

Why is sports analytics so difficult?

- Sports analytics "Meta"
- Greater variance
- Moneyball?

An experiment in p values

- http://fivethirtyeight.
 com/features/science-isntbroken/
- P-hacking ruins good science
- Statistics uses assumptions that are deeply flawed

How big data is connectomics?

- Top tier
- Hard to store
- Inefficient analysis

Why does size matter

- Pixels breed inaccuracy
- Big data = big graphs
- Inefficient analysis

Can machines accept variation?

- Cursive predicament
- Uniformity in question
- How bad is variation

Inefficient analysis leads to bad science

- P-hacking
- Overfitting
- Time frame for success

Connectomics dependency on statistics

- No ground truth
- Currently tenuous results
- Balance between error rate and analysis time

When is connectomics meaningful

- When are results definitive
- Can results be definitive
- Will there be a bottleneck?

