

# Predicting accidents among Fleetrisk drivers

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# Bad drivers cost money

Predicting who will have an accident is difficult



# Anstey (2005) “The Capacity to Drive Safely”



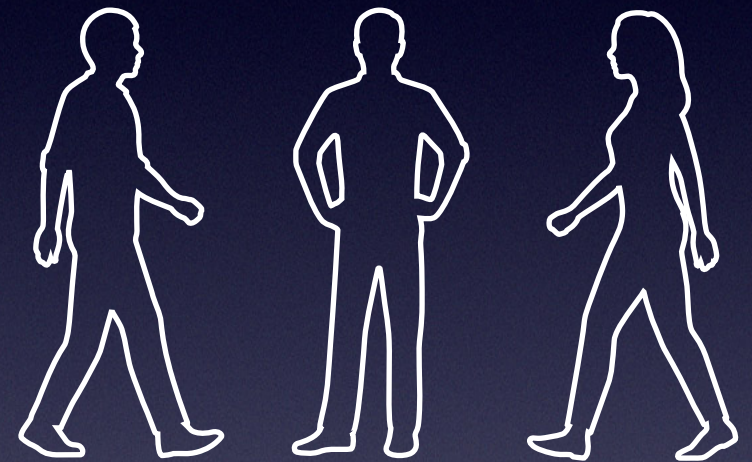
**Not  
Conscientious**

+



**Not  
Agreeable**

+



**Extroverted**

**Drivers over 70**



# Fleetrisk Data

Divided Attention	Short-term Memory	Working Memory	Facial Recognition	Resilience
Focus	Spatial Memory	Overall Emotions	Vocal Recognition	Agreeableness
Inhibition	Spatial Orientation	Positive Emotions	Emotional Stability	Conscientiousness
Processing Speed	Visual Perception	Negative Emotions	Extraversion	Event Level Telematics
Response Accuracy	Visual Search	Neutral Emotions	Openness	Accident Claims



# No correlation to accidents

<del>Divided Attention</del>	<del>Short-term Memory</del>	<del>Working Memory</del>	<del>Facial Recognition</del>	<del>Resilience</del>
<del>Focus</del>	<del>Spatial Memory</del>	<del>Overall Emotions</del>	<del>Facial Recognition</del>	<del>Agreeableness</del>
<del>Inhibition</del>	<del>Spatial Orientation</del>	<del>Positive Emotions</del>	<del>Emotional Stability</del>	<del>Conscientiousness</del>
<del>Processing Speed</del>	<del>Visual Perception</del>	<del>Negative Emotions</del>	<del>Extraversion</del>	
<del>Response Accuracy</del>	<del>Visual Search</del>	<del>Neutral Emotions</del>	<del>Openness</del>	



# Accident Claims Data

**342 Good Drivers**

**52 Bad Drivers**

No  
Accidents  
Ever

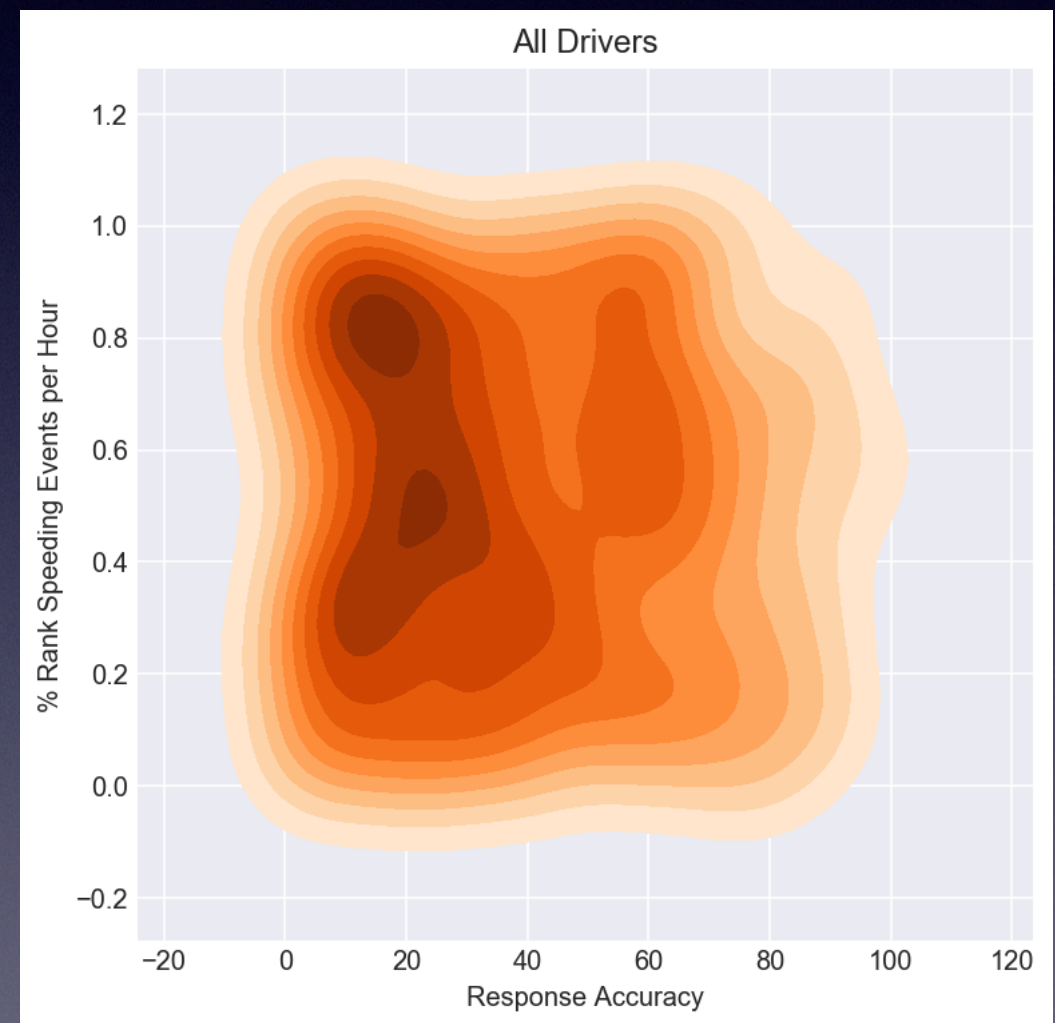
No  
Accidents  
Yet...

Had  
Accidents



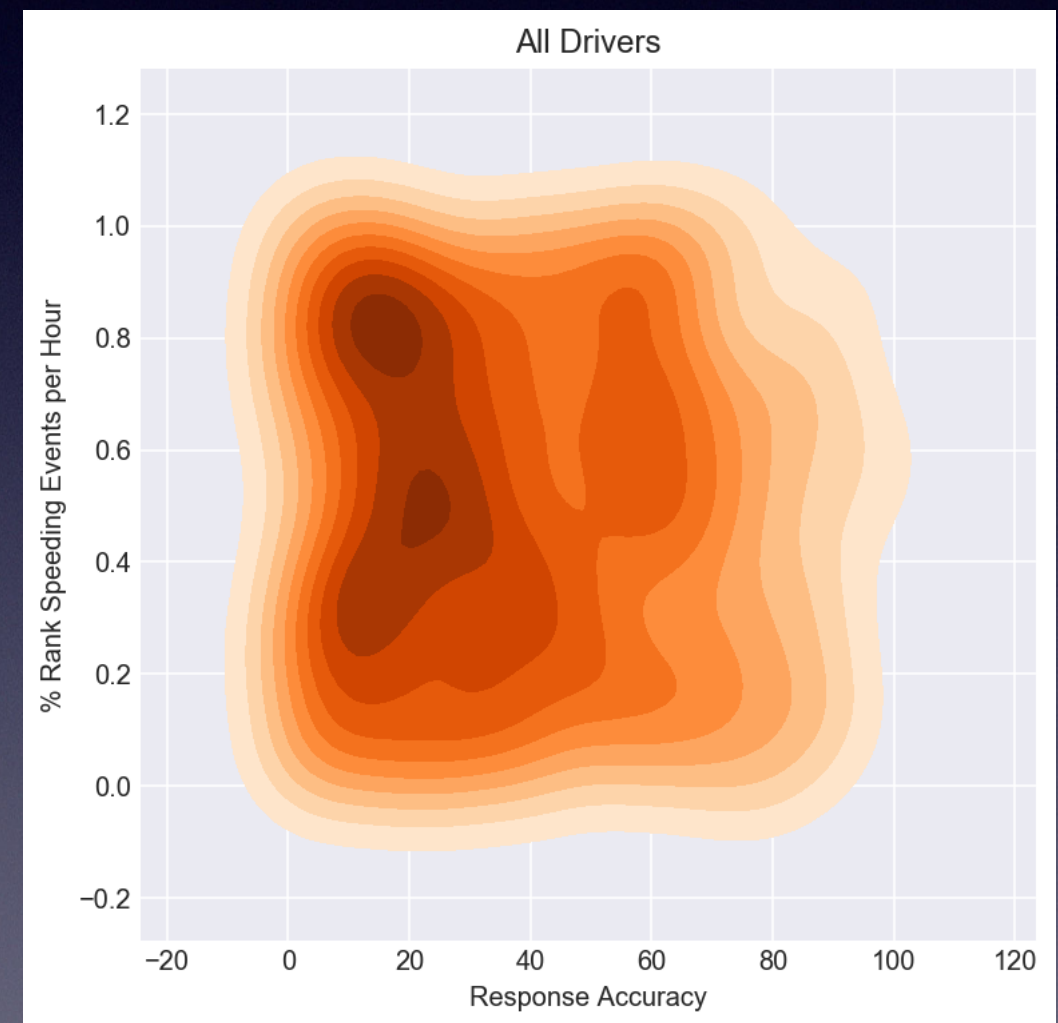
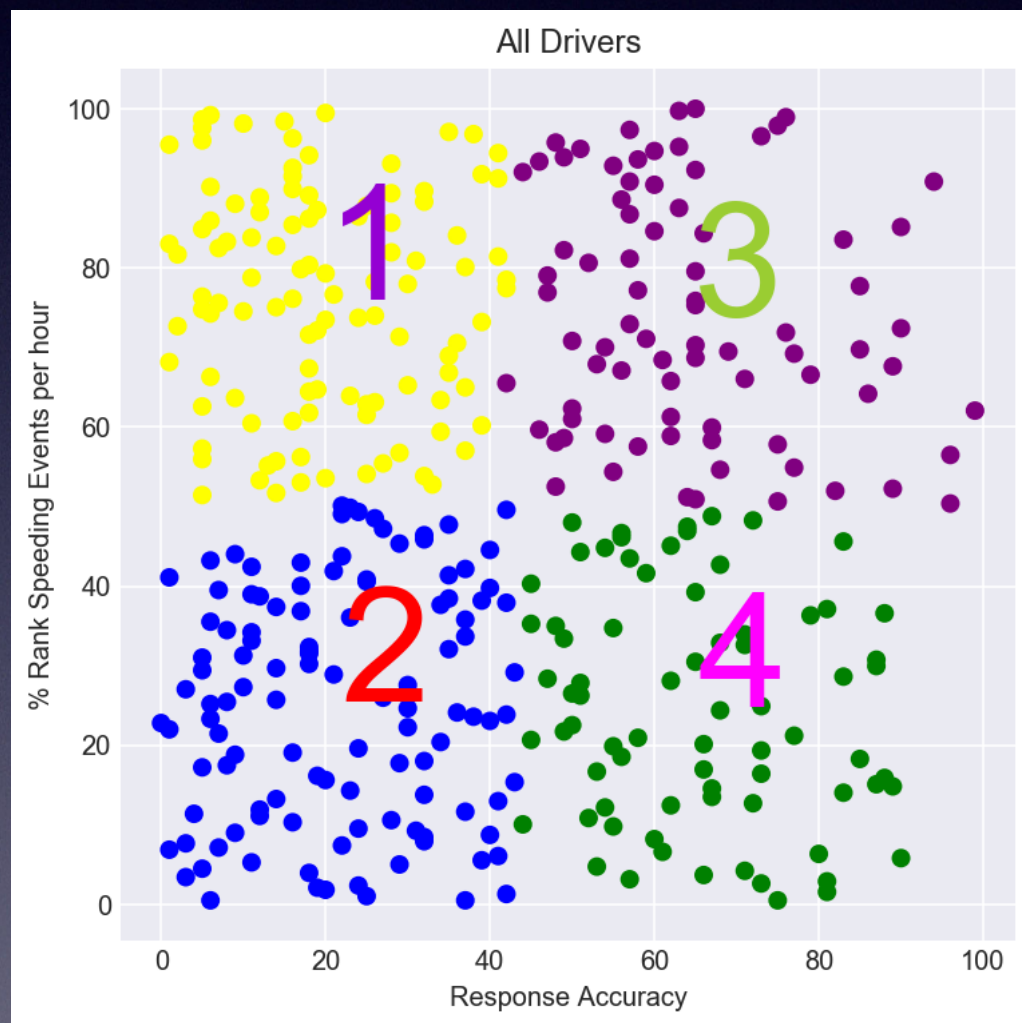
# 3 to 4 clusters emerge

1. **Slow reaction, High speed**
2. **Slow reaction, Low speed**
3. **Fast reaction, High speed**





# Rare Cluster: Fast reacting drivers who don't speed





# Average number of accidents per cluster

	Slow Reaction	Fast Reaction
High Speed	16.7%	12.5%
Low Speed	13.9%	9.5%



# Takeaways

1. Slow down
2. If you happen to have fast reaction speeds, you should *really* slow down



# Cost Function

Predict	Actual	Cost
 <small>DAVID ZALAZNIK/JOURNAL STAR</small>		\$25
	 <small>DAVID ZALAZNIK/JOURNAL STAR</small>	\$2200



# Savings per driver

