MIS 0855 Spring 2015 – Data Science

Day 36 – Predictive Analytics

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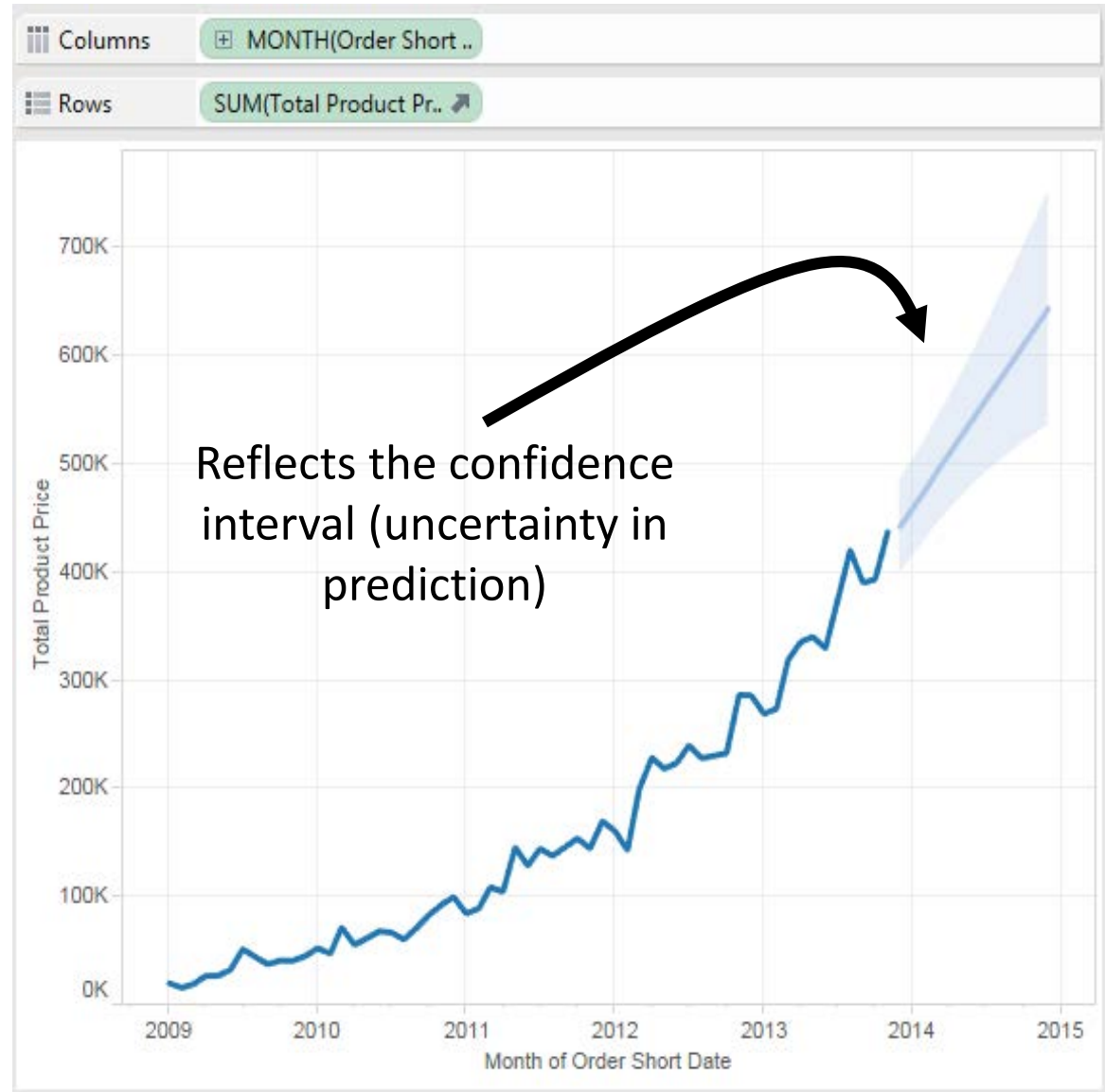*Apr. 13th, 2015*

Fox School of Business
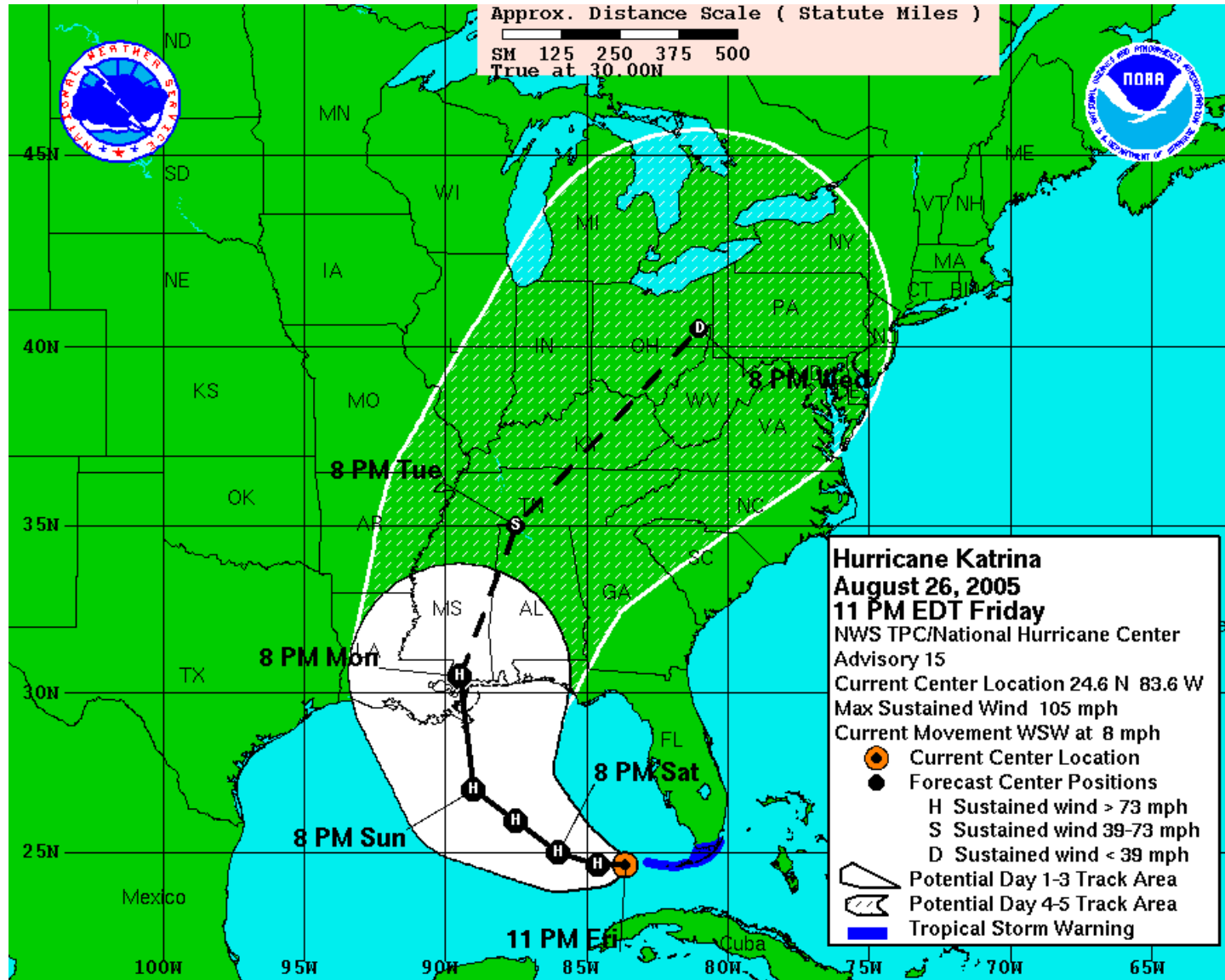TEMPLE UNIVERSITY

Guess what…

What is the product that a male customer in mid-30s is most likely to purchase with a bag of six-bottle beer in a grocery store?
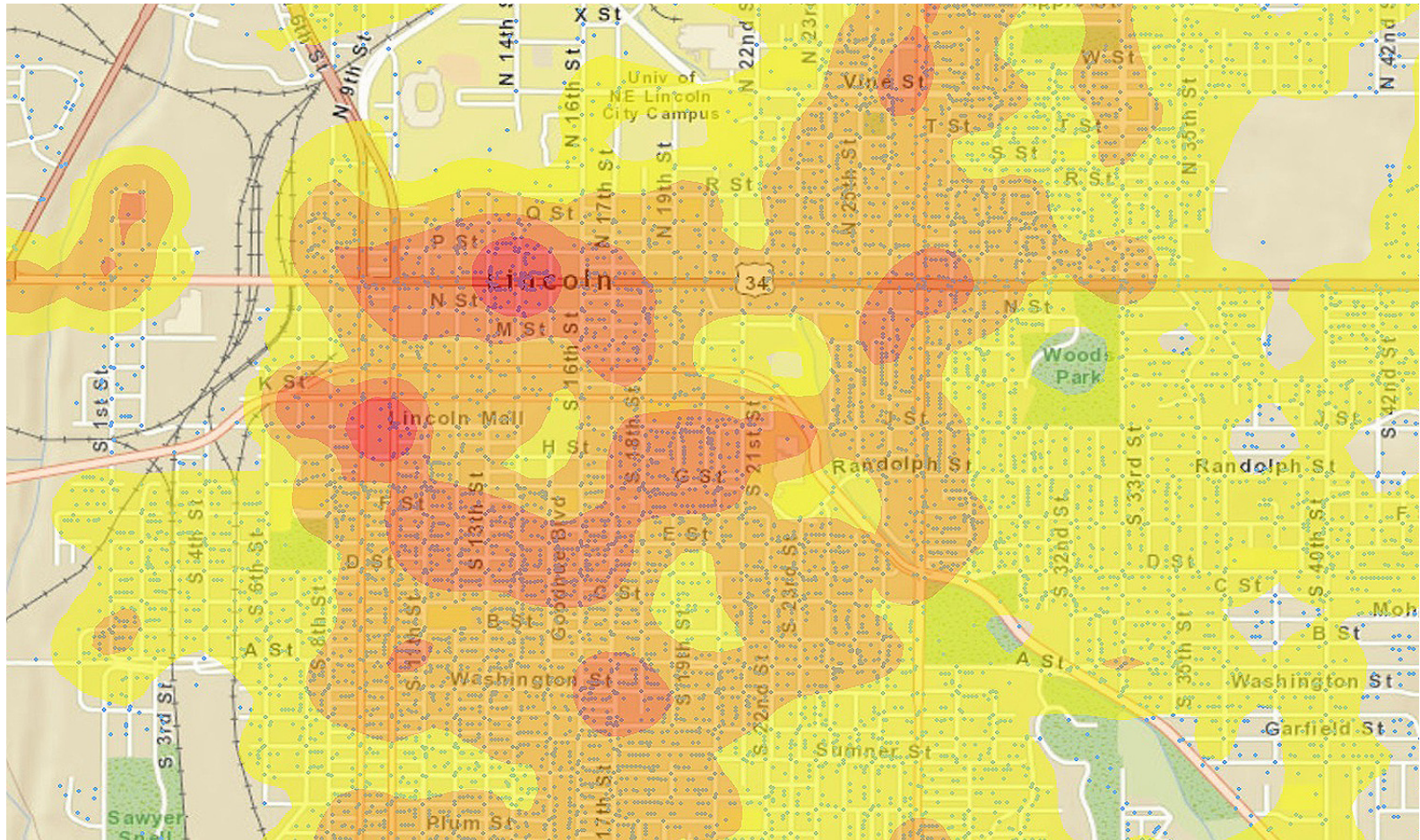
- Snacks
- Frozen Pizza
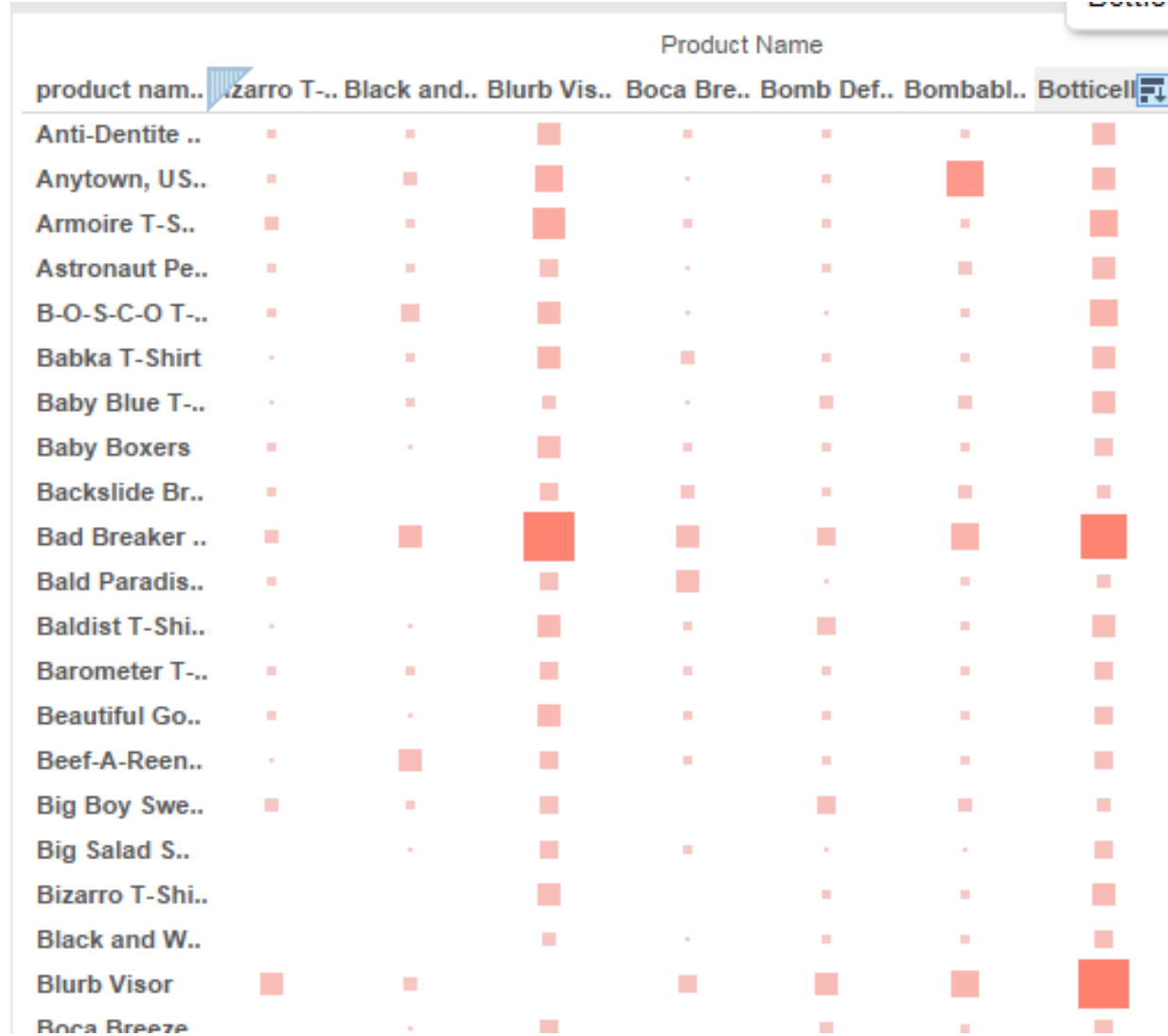- Cigarette
- Diaper

Forecasting

Reflects the confidence interval (uncertainty in prediction)

Crime Hotspots

Association Mining

Which products are likely to be purchased together?

Collaborative Filtering

Big Data Knows When You're Going to Quit Your Job Before You Do

By Jack Clark | Dec 30, 2014 8:03 AM ET | **44 Comments** ✉ **Email** 🖶 **Print**

Good bosses have an uncanny ability to sense when employees are unhappy and work with them to fix problems in the office before it's too late. At VMware in Silicon Valley, they let the machines figure it out.

VMware has been testing a new prediction technology from Workday, which makes software for human resources departments. The system delivers notifications about when employees might be getting ready to quit, and allows managers to intervene before

http://www.bloomberg.com/news/2014-12-29/big-data-knows-when-you-re-going-to-quit-your-job-before-you-do.html

Which customer is most valuable?

Jamie visited the store six months ago and purchased a $2,000 blouse. She never showed up again.

Linda has come by three times a month for the last two years and bought as much as $150 each visit.

Rachel began to shop at our store two months ago, visited three times, and bought $500 each time.

Predicting Customer Value

R F M

- Recency: How *recently* a customer purchased an item

- Frequency: How *frequently* she purchases an item

- Monetary value: How *much* she spends each time

Who is our MVC (most valuable customer)?

Jamie visited the store six months ago and purchased a $2,000 blouse. She never showed up again.

Linda has come by three times a month for the last two years and bought as much as $150 each visit.

She returns 20% of what she bought.

Rachel began to shop at our store two months ago, visited three times, and bought $500 each time.

Valuing Customers at a Casino (1/2)

- Two customers

    - One who visits once a month and spends more than $50,000 each visit, aka, a big whale

    - One who visits once or twice a week and spends amount $200-$300 each time.

- Which one is more valuable (or more profitable)?

http://eofdreams.com/whale.html
http://www.sipadan.org/fish-group-sipadan.php

Valuing Customers at a Casino (2/2)

- Conventional industry wisdom used to say that the big whale is to catch, since they are more valuable than the small fishes.

- Analysis of data show that the small fishes are more profitable. Why?

- The big whale spends more, but it is more expensive to serve them.