Queens College

CSCI-381

Data Analytics

Alex Pang
Fall 2019

What do you think you are taking?

Data Science, Data Mining

Decision Science, Business Intelligence

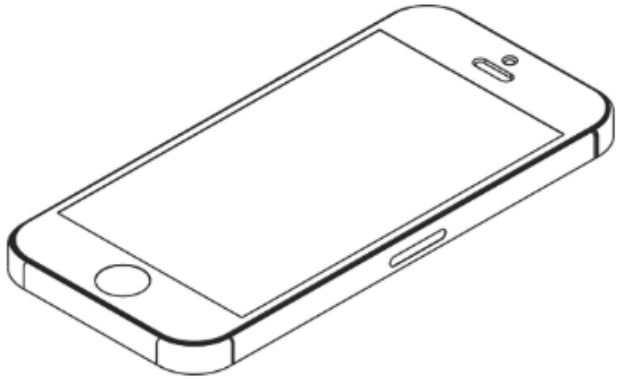
Artificial Intelligence, Machine Learning

Statistical Learning, Data Analytics

Why are you taking this class?

What are you taking this class

Go to **www.menti.com** and use the code **92 62 84**



1

Grab your phone

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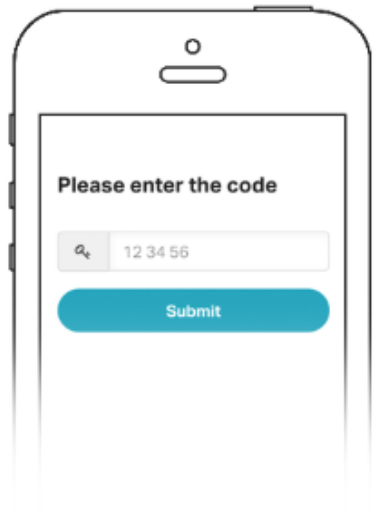

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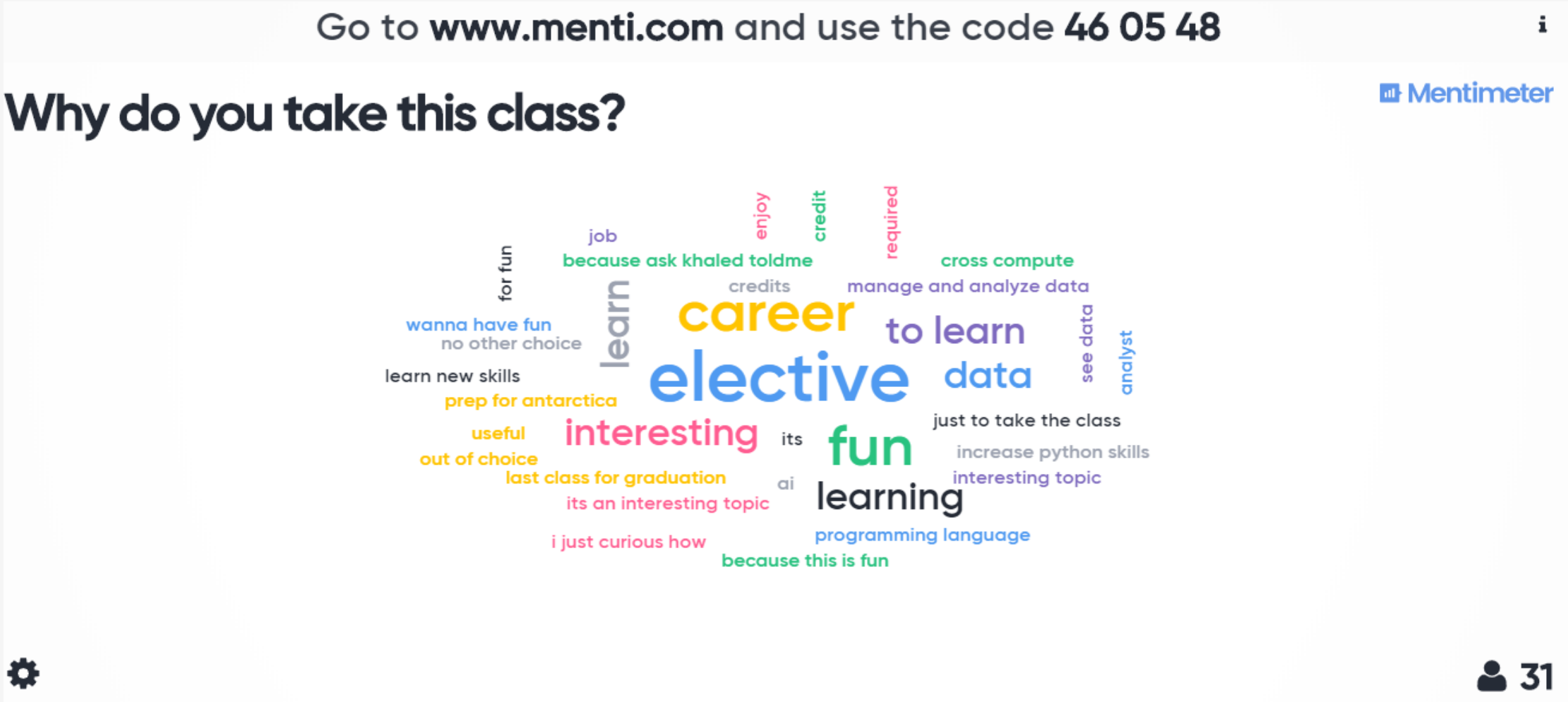
Enter the code 92 62 84 and vote!

Results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Mentimeter
Why do you take this class?
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31

Data Science as a career?

California nurse meets baby she helped save 28 years ago – and he's a doctor

In 2012, Harvard Business Review said Data Scientist will be the Sexiest Job of the 21st Century

Harvard Business Review

DATA

Data Scientist: The Sexiest Job of the 21st Century

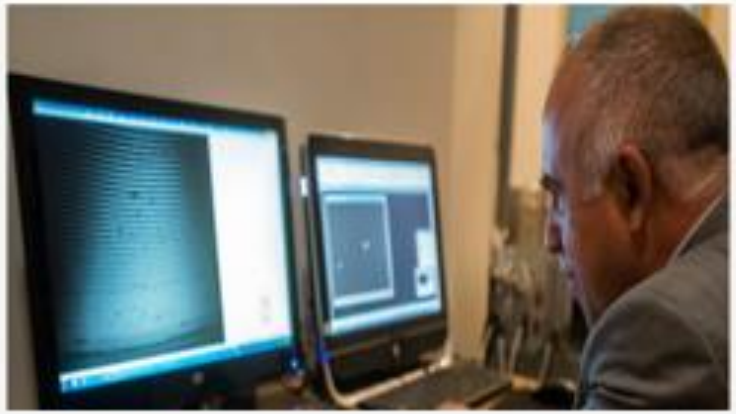
by Thomas H. Davenport and D.J. Patil

FROM THE OCTOBER 2012 ISSUE

Data Science as a career (2019 survey)

The 25 highest-paying entry-level jobs for college grads

1. Data scientists make $95,000 a year.

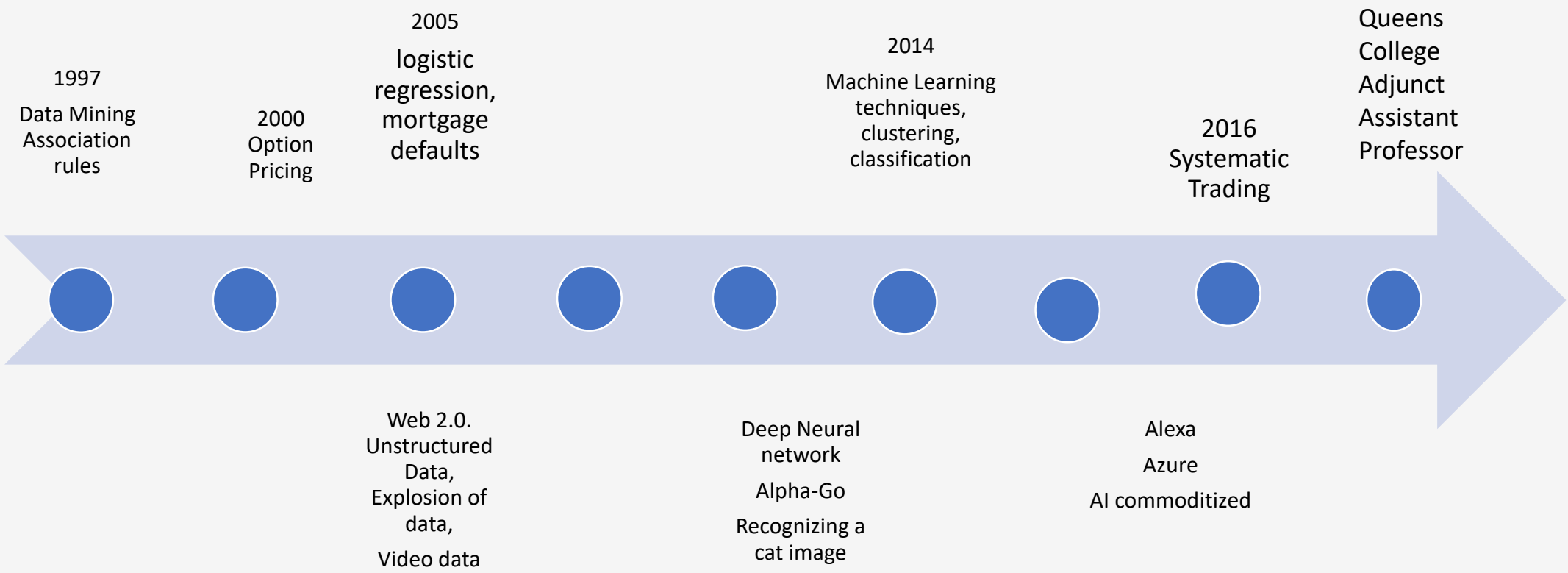


2. Software engineers make $90,000 a year.

4. Investment banking analysts make $85,000 a year.

CSCI381 Data Analytics – Instructor Bio

My Life As a Quant, Statistician and Data Scientist



Data Mining – where it all started

Association Rule Mining

- Given a set of transactions, find rules that will predict the occurrence of an item based on the occurrences of other items in the transaction

Market-Basket transactions

TID	Items
1	Bread, Milk
2	Bread, Diaper, Beer, Eggs
3	Milk, Diaper, Beer, Coke
4	Bread, Milk, Diaper, Beer
5	Bread, Milk, Diaper, Coke

Example of Association Rules

{Diaper} → {Beer},
{Milk, Bread} → {Eggs,Coke},
{Beer, Bread} → {Milk},

Implication means co-occurrence, not causality!

Remember Target Marketing these days?

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Exploratory Mining and Pruning Optimizations of Constrained Associations Rules

Article | Full-text available | Jan 2002 · ACM SIGMOD Record

Raymond T. Ng · Laks Lakshmanan · Alex Pang · Jiawei Hah

From the standpoint of supporting human-centered discovery of knowledge, the present-day model of mining association rules suffers from the following serious shortcom- ings: (i) lack of user exploration and control, (ii) lack of focus, and (iii) rigid notion of relationships. In effect, this model functions as a…

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Optimization of Constrained Frequent Set Queries with 2-variable Constraints

Article | Full-text available | Nov 1999 · ACM SIGMOD Record

Laks Lakshmanan · Raymond T. Ng · Jiawei Han · [...] · Alex Pang

Currently, there is tremendous interest in providing ad-hoc mining capabilities in database management systems. As a first step towards this goal, in [15] we proposed an architecture for supporting constraint-based, human-centered, exploratory mining of various kinds of rules including associations, introduced the notion of constrained frequent se…

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Quantitative Analyst, Technologist and Educator

- Lehman Brothers, Merrill Lynch, Subprime Mortgage originator
- Multiple hedge funds with over 5B AUM
- Financial software start-up

...

- Friends For Impact (non-profit organization) advisors
- Complete Foundation Creative Technology Center
- Queens College Tech Incubator volunteer/mentors

- Two times outstanding teaching assistants awards (Physics and Computer Science)

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Me:

Love to share what I know

Love to help in whatever ways possible

You:

Learn something incredibly useful for your career and have fun at the same time