Winter Institute in Data Science

Ryan T. Moore

2023-01-03

Goals

Skills

Examples

Jeff Gill, Director, Center for Data Science

Installations

Welcome!

- Political methodologist in Dept of Government in SPA

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- Senior Social Scientist at The Lab @ DC

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- Methods Fellow at Office of Evaluation Sciences (US GSA)

Data Science

Particular intersection of

- Statistical practice
- Computational tools
- Substantive knowledge

- Stats: prediction (vs. explanation), algorithms (vs. models)

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- Computing: addressing problems with data *per se* (size, tidy-ness, un/structure, replicability)

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- Substance: social science

Social Meaning

Harvard Business Review

Data | Data Scientist: The Sexiest Job of the 21st Century

Data Scientist: The Sexiest Job of the 21st Century

by Thomas H. Davenport and D.J. Patil

From the October 2012 Issue

Social Meaning

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. . . and salaries are high . . .

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- Gain exposure to machine learning and other modern statistical data science methods and computing tools
- Do original research using data sci methods. Contribute methods, substance, both.

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  - text as data, NLP

Examples

What is a data science task?

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```
social <- read_csv("http://j.mp/2Et71U0")
filter(social, (hhsize > 1) & (primary2004 == 0))
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```
## # A tibble: 161,275 x 6
##    sex    yearofbirth primary2004 messages   primary200
##    <chr>        <dbl>       <dbl> <chr>           <dbl>
##  1 male          1941           0 Civic Duty          0
##  2 female        1947           0 Civic Duty          0
##  3 male          1951           0 Hawthorne           1
##  4 female        1950           0 Hawthorne           1
##  5 female        1982           0 Hawthorne           1
##  6 male          1981           0 Control             0
##  7 female        1959           0 Control             1
##  8 male          1956           0 Control             1
##  9 female        1968           0 Control             0
## 10 male          1967           0 Control             0
## # ... with 161,265 more rows
```

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```
parse_date("15 enero 2000",
           locale = locale("es"),
           format = "%d %B %Y")
```

```
## [1] "2000-01-15"
```

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```
git add paper.tex
git commit paper.tex
git push
```

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- How do we compare models/prediction strategies?

Course GitHub page:

https://github.com/ryantmoore/winter-inst-2023

(syllabus tour)

Jeff Gill, Director, Center for Data Science

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Installations

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- R:
  https://cran.r-project.org
- RStudio (Desktop):
  https://posit.co/products/open-source/rstudio/
- Anaconda:
  https://www.anaconda.com
- Python:
  https://www.python.org/downloads/