Analytics Programs at Simon

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The Pull Model

FROM RECRUITERS ➔ LEARNING GOALS ➔ STUDY PLAN & ADMISSIONS PROFILE
Recruiter Roundtable January 2014 NYC
What we learned...

Data Wrangling
- Integration
- Cleaning, Re-coding, and Transformation
- Filtering

Data Exploration and Visualization
- Feature selection and generation
- Understand the scope of and basic patterns in the data
- Descriptive analytics

Predictive Modeling
- Diverse toolkit, model tuning, avoiding overfitting
- Understand the limits and risks of predictions

Visualize models, predictions, results
- Client presentations
What data scientists spend the most time doing

- Building training sets: 3%
- Cleaning and organizing data: 60%
- Collecting data sets: 19%
- Mining data for patterns: 9%
- Refining algorithms: 4%
- Other: 5%

*Forbes Magazine* March 2016
Toolkits

- R
- SQL
- Python
- Tableau
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<thead>
<tr>
<th></th>
<th>MS in Business Analytics</th>
<th>MS in Marketing Analytics</th>
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<tbody>
<tr>
<td><strong>Pre-Fall</strong></td>
<td>Economics and Marketing &amp; Programming for Analytics (R)</td>
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<tr>
<td><strong>Fall</strong></td>
<td>Statistics (R) &amp; Intro to Bus Analytics (Tableau, SQL, R)</td>
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<td>Finance and Accounting or Data Management</td>
<td>Pricing</td>
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<td><strong>Winter</strong></td>
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<td>Marketing Analytics (R)</td>
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<td>Advanced Business Analytics (Python)</td>
<td>Marketing Research (R)</td>
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<td>Big Data (Hadoop, Spark, R, Python)</td>
<td>Digital Marketing (R) or Advanced Pricing (R)</td>
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<td>Practicum</td>
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<td><strong>Spring</strong></td>
<td>Practicum continued &amp; Social Media Analytics (R)</td>
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<td>Adv. Marketing Analytics (R) or Adv. Bus Modeling or Supply Chain Analytics</td>
<td>Pricing Analytics (R) or Adv. Bus Modeling</td>
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<td><strong>All Terms</strong></td>
<td>Business Communication</td>
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Introduction to Business Analytics

Descriptive Analytics
- Tableau worksheets and dashboards;
- R plotting and descriptive methods
- Text data

SQL data retrieval (including joins and subqueries)

Supervised Predictive Models
- Trees,
- Naive Bayes,
- Neural Nets (IBM Watson)

Evaluation of Models
- Errors, statistics, ROC curves

How to avoid overfitting
- Bias variance tradeoff, hold out samples, cross-validation

Unsupervised models
- Dimension reduction using Principal Components Analysis
- Clustering

Tableau Stories
Advanced Business Analytics

Python

Data analytics with Python:
- Data cleaning, and
- data wrangling
- Pandas module

Data visualization using
- numpy, and matplotlib.

Parallel computing and Google cloud platform;

Modeling learning problems with Python Algorithms:
- SVM,
- Ensemble methods,
- Page rank,
- recommendation systems,
- Clustering and mixture models,
- Association rules