Library Partnerships to Support Data Analytics Engineering Programs

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Agenda

- Data Analytics in the US
- Data Analytics @ GMU
- Support for Data Analytics
Growth of Analytics and Data Science Masters Degree Programs in the US

Source: M. Rapa, Institute for Advanced Analytics, 5/29/19
https://analytics.ncsu.edu/?page_id=4184
### Defining Data Analytics Positions

<table>
<thead>
<tr>
<th>DSA Framework Category</th>
<th>Functional Role</th>
<th>Sample Occupations</th>
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</thead>
<tbody>
<tr>
<td><strong>Data Scientists &amp; Advanced Analytics</strong></td>
<td>Create sophisticated analytical models used to build new datasets and derive new insights from data</td>
<td>Data Scientist, Economist</td>
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<tr>
<td><strong>Data Analysts</strong></td>
<td>Leverage data analysis and modeling techniques to solve problems and glean insight across functional domains</td>
<td>Data Analysts, Business Intelligence Analyst</td>
</tr>
<tr>
<td><strong>Data Systems Developers</strong></td>
<td>Design, build and maintain and organization's data and analytical infrastructure</td>
<td>Systems Analyst, Database Administrator</td>
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<tr>
<td><strong>Analytics Managers</strong></td>
<td>Oversee analytical operations and communicate insights to executives</td>
<td>Chief Analytics Officer, Marketing Analytics Manager</td>
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<tr>
<td><strong>Functional Analysts</strong></td>
<td>Utilize data and analytical models to inform specific functions and business decisions</td>
<td>Business Analyst, Financial Analyst</td>
</tr>
<tr>
<td><strong>Data-Driven Decision Makers</strong></td>
<td>Leverage data to inform strategic and operational decisions</td>
<td>IT Project Manager, Marketing Manager</td>
</tr>
</tbody>
</table>

US Data Science and Analytics Degree Programs by Degree Title

- Business Analytics: 34% (86 programs)
- Data Science: 23% (58 programs)
- [Data] Analytics: 17% (43 programs)
- Other: 26% (66 programs)

253 Programs
December 2018

Source: Institute for Advanced Analytics
https://analytics.ncsu.edu/?page_id=4184
US Data Science and Analytics Degree Programs by Degree Title and School Type

Source: Institute for Advanced Analytics
https://analytics.ncsu.edu/?page_id=4184
Introduction: George Mason University

- Doctorate granting institution
- Research 1 University (2016)
- Total enrollment (2018): 37,316
- 211 degree programs

Data Analytics Engineering (DAEN) @ GMU

Graduate Program
Fall 2014 on campus
Spring 2019 online added

Fall 2014 to Fall 2018:
Enrollment increased 902 %

Offers 10 concentrations

Accepts students from a wide variety of academic backgrounds
Supporting DAEN: Partnerships

**Library Internal Partnerships**
- Subject Librarian – DiSC
- DiSC – Graduate Research Assistants

**External Partnerships**
- Library Staff – DAEN Faculty
- DAEN Faculty – Corporate Partners
- Library Staff – State Library Consortium Director (VIVA)
Supporting DAEN:

Identify Student Needs

Data needs

Numeric Data
Social Media Data
Geospatial
Large Text Corpora

Issues

• Data Ethics
• Diverse Academic backgrounds
• Learning a skill set not a subject discipline
Supporting DAEN:

Other Issues

Knowledge Gaps
- Technical skills
- Research process
- Working with messy data

Experience Gaps
- Using licensed resources
- Project definition & scoping
Supporting DAEN:

Addressing Needs & Issues

- Meetings with Coordinators and Faculty
- Created Online Resources for Students and Faculty
- DAEN Class Instruction
Supporting DAEN:

Plans for the Future

Continue working closely with DAEN program faculty.

Offer library orientation for Foundations class.

Develop pre-capstone workshop for students.
References & Resources


• Mason Data LibGuides: https://infoguides.gmu.edu/dsc?b=t&group_id=19734

• Kaggle https://www.kaggle.com