Clarkson University Masters Program in Analytics

Program Development Team:
- Business - Boris Jukic, Bebonchu Atems, John Milne
- Arts & Sciences - Joseph Skufca, Sumona Mondal
- Engineering – Daqing Hou, Brian Helenbrook
Data Analytics?

Tools, methods, and skills to conduct and manage the acquisition, storage, use, interpretation and **value extraction** of ever increasing amounts of ubiquitous data.
Statistics is learned and applied at multiple levels of sophistication.

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<th>Data</th>
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<td>Data Scientist</td>
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Analytics → Actions
Pedagogy to deliver a “Common” Analytics skill set

- Benchmarked against other programs
- Evaluated against job requirements
- In consult with academia, national labs, industry

Developed by collective agreement of the program committee

Foundation Skills
- Probability and Statistics
- Data Modeling and SQL
- Optimization Methods

Most common professional skills
- Data Mining (Machine Learning)
- Data Visualization
- DB design and management, Data Warehousing
- Dealing with “Big Data”
- Spreadsheet Modeling
Pedagogy to deliver a “Common” Analytics skill set

Foundation Skills
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Program Curriculum

Core
- IA 510 - Database Modeling, Design and Implementation
- IA 520 - Optimization Methods for Analytics
- IA 530 - Probability and Statistics for Analytics
- IA 640 - Information Visualization
- IA 650 - Data Mining

Existing Electives (a sampling)
- CS 549 - Computational/Machine Learning
- CS 551 - Artificial Intelligence
- CS 559 - Human Computer Interaction
- EC 611 - Econometrics
- EE 501 - Digital Signal processing
- ES 505 - Design of Experiments and Analysis of Data
- EE 574 - Pattern Recognition
- ME 529 - Stochastic Processes for Engineers
- MK 696 - Marketing Research Methods
- OM 680 - Strategic Project Management

Program Electives
- IA 605 - Data Warehousing and Big Data Management
- IA 505 - Tabular Data Analytics
- IA 630 - Modeling for Insight
- IA 670 - Geospatial Systems

• One year / Nine Courses (Fall/Spring)
• Industry Sponsored Capstone – 6 credits (Summer)