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NASEM Workshop on Improving Defense
Acquisition Workforce Capability in Data Use
April 14th, 2020

Introductions

About **me**:

- At UMass, I teach undergraduate computer science (Artificial Intelligence, Predictive Analytics, etc.).

- I also work for the Center for Data Science, where I run programs focused on bringing machine learning and data science to public interest domains.

- In past lives, I have worked in startups, finance, consulting, and politics.

About the **University of Massachusetts Amherst**:

- "Flagship" campus in the UMass system, with ~28k students

- The College of Information and Computer Sciences has ~1,500 undergrad majors and 600 grad students

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Data Science Skills

- Data access and storage: databases, online APIs, cloud infrastructure

- Data wrangling: extracting, transforming, and manipulating data resources with code

- Exploratory data analysis, data visualization and summarization

- Machine learning: predictive modeling, clustering

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- Understanding of basic statistics and probability theory

- Familiarity with experimental design, prediction vs. causal reasoning, scientific method

- Understanding of data ethics, fairness, transparency

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Industries in Transition

- Professional sports have all undergone "moneyballization" in recent years.

- Political campaigns are becoming increasingly data-driven. (Whether this promotes or subverts democracy is an open question!)

- The financial sector, while always quantitative, has mainstreamed methodologies based on machine-learning.

- Modern marketing departments depend on micro-targeting for customer acquisition and conversion.

- Non-profit organizations face increasing pressure to strategize and evaluate progress using hard data.