Veterans Analytics Course

September 16-17, 2020

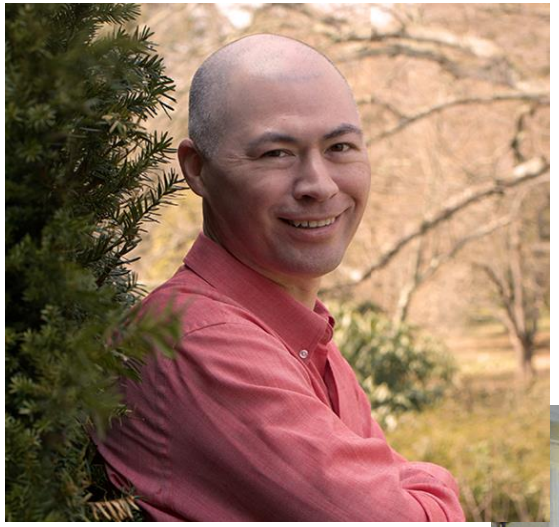
Provided by: CANA Advisors

Course Welcome

Instructors

Walt DeGrange –Director of Analytic Capabilities

- 20 years of experience in scoping, performing and implementing analytic solutions
- 21 years Naval Logistics experience
- Graduate level teaching at NPS, University of Arkansas, and NC State University
- Current Course Director for the Military Operations Research Society (MORS) Critical Skills for Analytics Professionals
- Location: North Carolina



Instructors

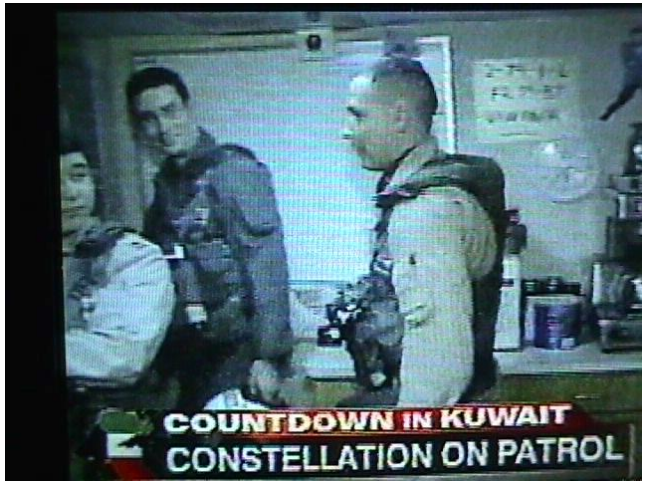
Jason Fincher – Principal Logistics Analyst

- 23 years of military logistics operations and supply chain support analysis
- Current president and founder of the Association of Marine Corps Logisticians (AMCL)
- Location: Virginia

Instructors

Connor McLemore – Principal OR Analyst

- 12 years of experience in scoping, performing, and implementing analytic solutions.
- Graduate-level teaching in NPS Operations Research department
- Published author on artificial intelligence and machine learning
- Chair of National Security Applications at ProbabilityManagement.org
- Location: Nevada



Instructors

Roque Graciani – Senior OR Analyst

- 22 years of military experience
- 12 years of experience as a U.S. Marine Corps Logistics Officer
- Over 9 years experience as an operations research practitioner
- Military Operations Research Society Member
- Location: New York

Introductions

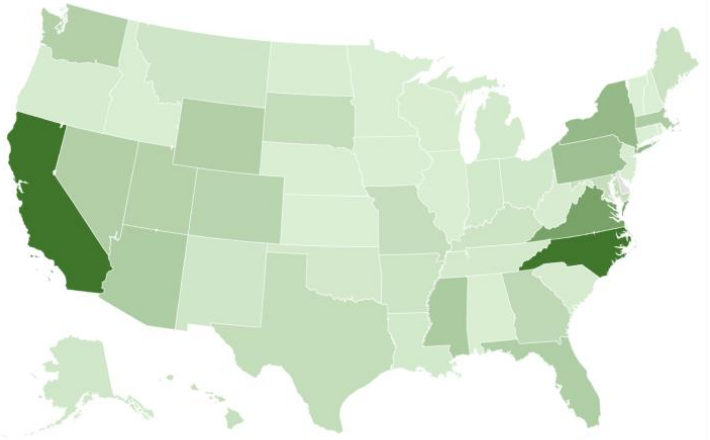
- Name
- Current role
- Where are you located?
- Why did you take this course? What do you hope to learn by the end of this course?

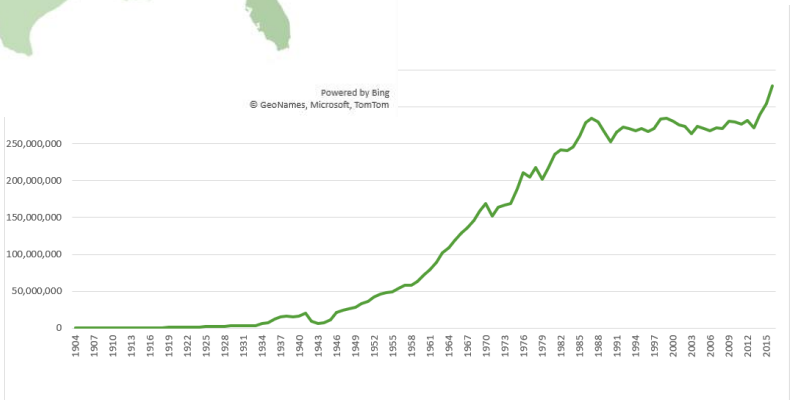
Course Overview

- Wednesday, September 16
  - Module 1: Showcasing Your Analytics
  - Module 2: Descriptive Analytics and Data
- Thursday, September 17
  - Module 3: Probability and Predictive Analytics
  - Module 4: Prescriptive Analytics and Optimization
  - Panel Discussion

Course Overview

- A look at what we'll explore in this class:





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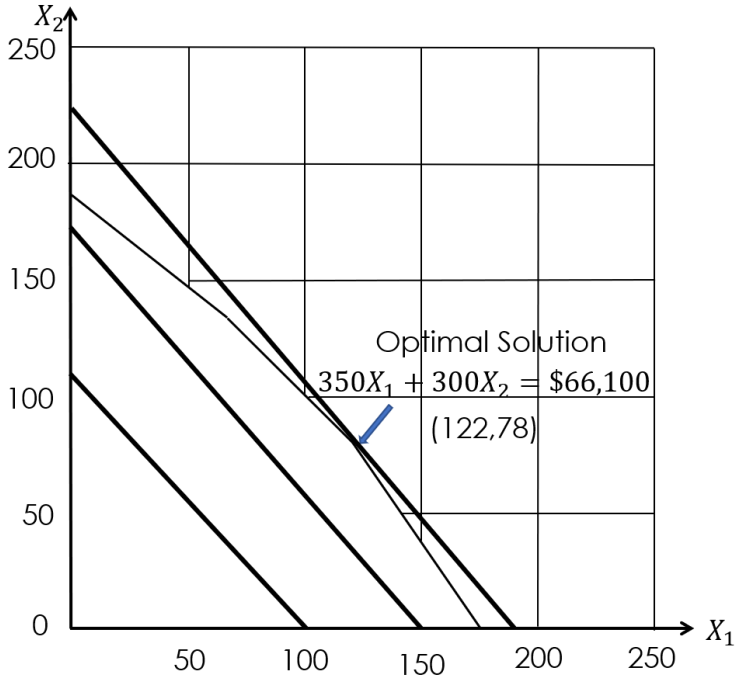


“Cooking show” method

- In this course, we’ll work through many real-world examples in Excel
- To access the data, view alternate implementations of these problems, check out our repository on GitHub:
- https://github.com/canallc/Training-Resources

VETERANS IN ANALYTICS PANEL DISCUSSION

September 17, 2020 – 6:00 pm EDT

John Alexander Harris
Full-Stack Data Scientist
Boxelder Analytics

Randi VanNyhuis
Commercial Intelligence Manager
The Walt Disney Company

Joshua Wilson
Corporate Relationship Manager
America's Warrior Partnership

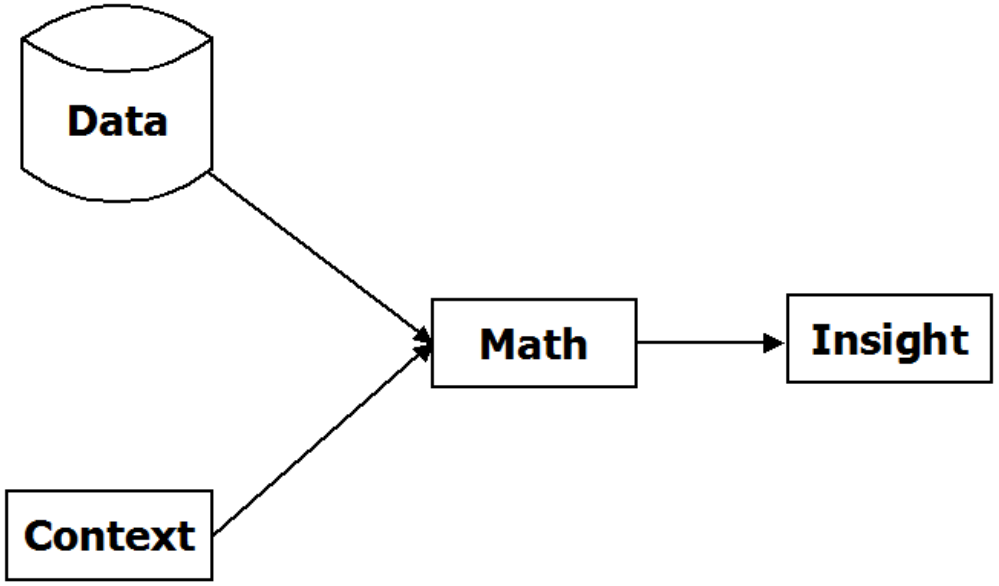
Dan Hudson
Chief Technology Officer | Chief Data Scientist
ReefPoint Group LLC

Jerome Dixon
Senior Operations Research Analyst
CANA Advisors

What is Analytics?

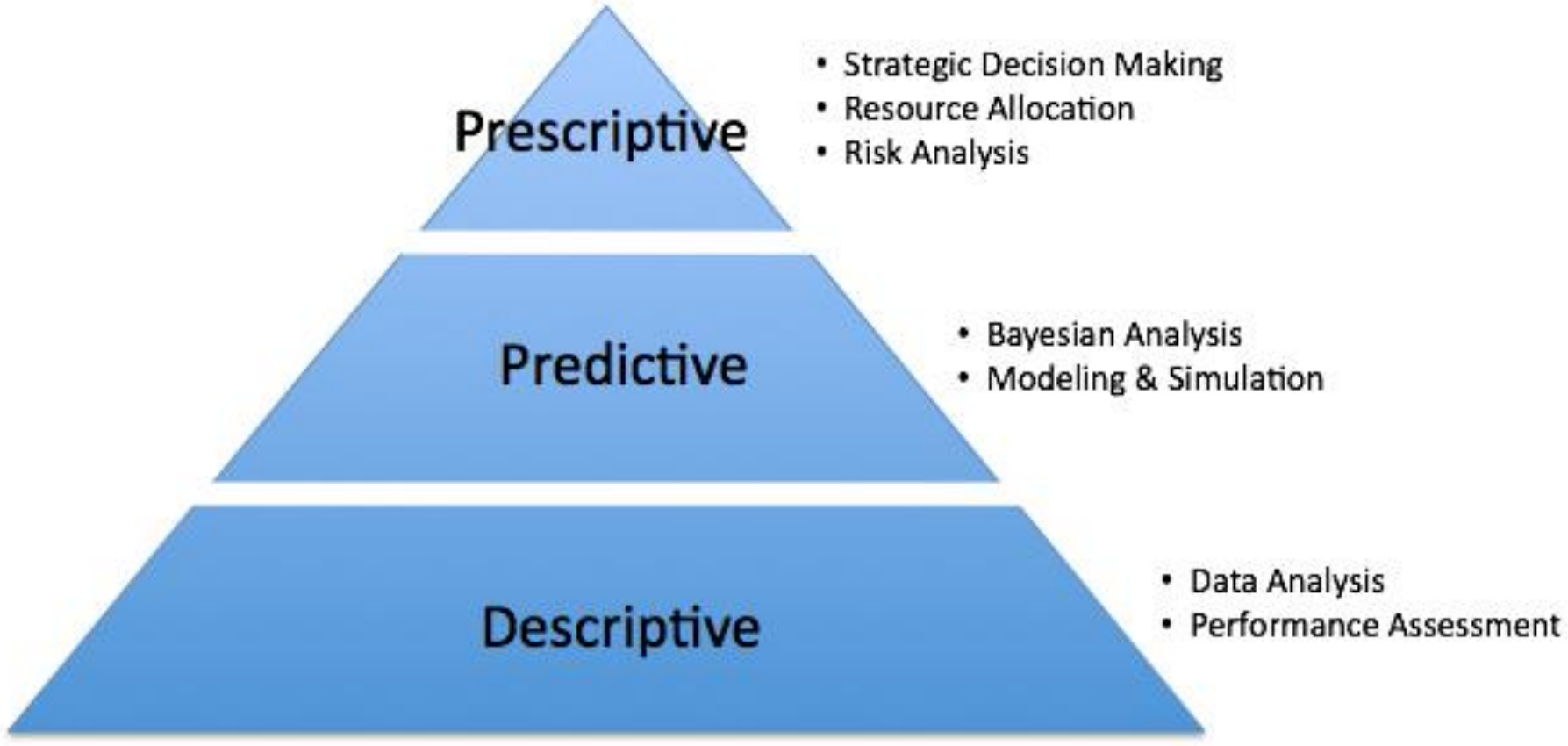
Analytics

- The **systematic**, **computational** analysis of data or statistics.
- Information resulting from the aforementioned analysis.



Analytics Application

Analytics Pyramid



History

- WWII – Anti-Aircraft Guns on Merchant vessels
  - Morse and Kimball
- Should Merchant vessels be armed with Anti-Aircraft guns?
  - The argument against - these guns score very few ‘kills’ against enemy aircraft
  - Does this matter?

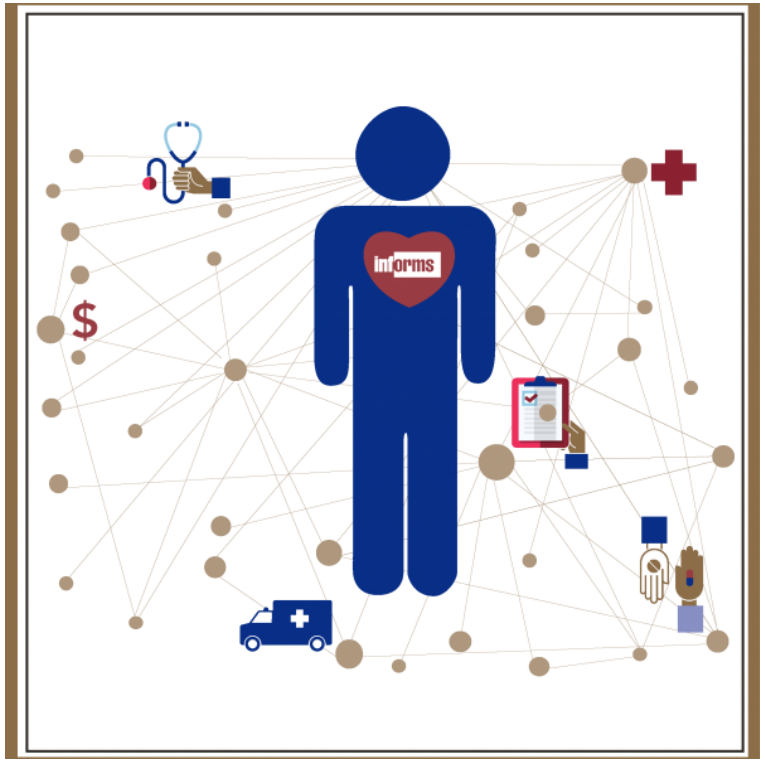
What is an Analytics Profession?

- Operations Research*
- Industrial Engineering
- Systems Engineering
- Statistician
- Data Engineer
- Data Scientist
- Applied Mathematician
- Others…

** Your instructors for this course count Operations Research as their 'home' discipline.*

Future Directions – Application Areas

- Healthcare
- "Internet of Things"
- Additive Manufacturing
- Transportation
- Banking
- Supply Chain
- Sports
- Utilities



So you want to be an Analytics Professional?

glassdoor

50 Best Jobs in America for 2020

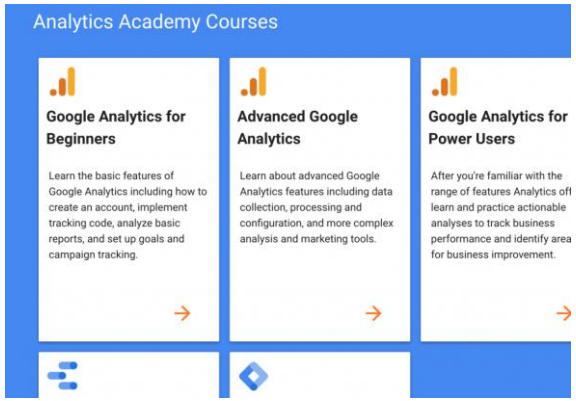
	Job Title	Median Base Salary	Job Satisfaction	Job Openings
1	Front End Engineer	$105,240	3.9/5	13,122
2	Java Developer	$83,589	3.9/5	16,136
3	Data Scientist	$107,801	4.0/5	6,542
4	Product Manager	$117,713	3.8/5	12,173
5	DevOps Engineer	$107,310	3.9/5	6,603
6	Data Engineer	$102,472	3.9/5	6,941
7	Software Engineer	$105,563	3.6/5	50,438
8	Speech Language Pathologist	$71,867	3.8/5	29,167
9	Strategy Manager	$133,067	4.3/5	3,515
10	Business Development Manager	$78,480	4.0/5	6,560

50 Best Jobs in America for 2019

	Job Title	Median Base Salary	Job Satisfaction	Job Openings
1	Data Scientist	$108,000	4.3/5	6,510
2	Nursing Manager	$83,000	4/5	13,931
3	Marketing Manager	$82,000	4.2/5	7,395
4	Occupational Therapist	$74,000	4/5	17,701
5	Product Manager	$115,000	3.8/5	11,884
6	Devops Engineer	$106,000	4.1/5	4,657
7	Program Manager	$87,000	3.9/5	14,753
8	Data Engineer	$100,000	3.9/5	4,739
9	HR Manager	$85,000	4.2/5	3,908
10	Software Engineer	$104,000	3.6/5	49,007

How to Become an Analytics Professional?

Learning Analytics



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E vs I

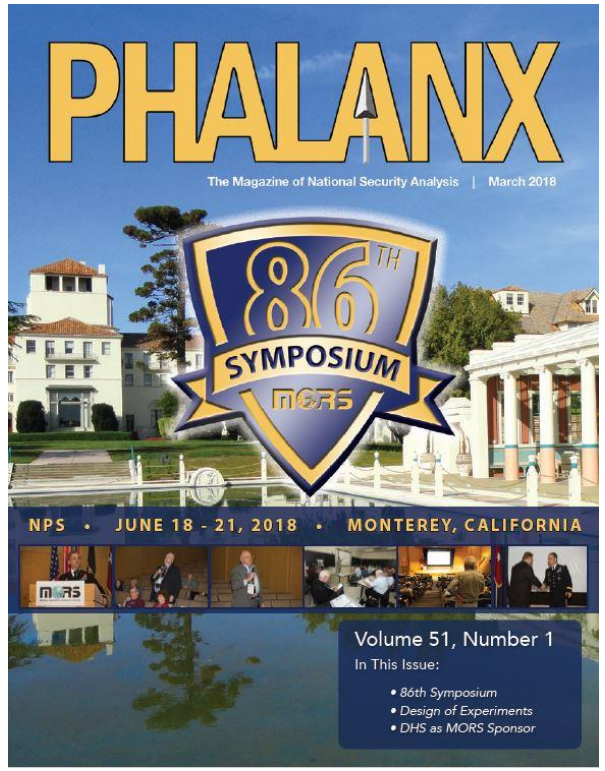
Different flavors of analytics expertise

Analytics Professional Organizations

- **INFORMS**
  - Institute for Operations Research and Management Sciences www.informs.org
- **MORS**
  - Military Operations Research Society www.mors.org
- **American Statistical Association**
- **Royal (UK) Statistical Society**
- And, others

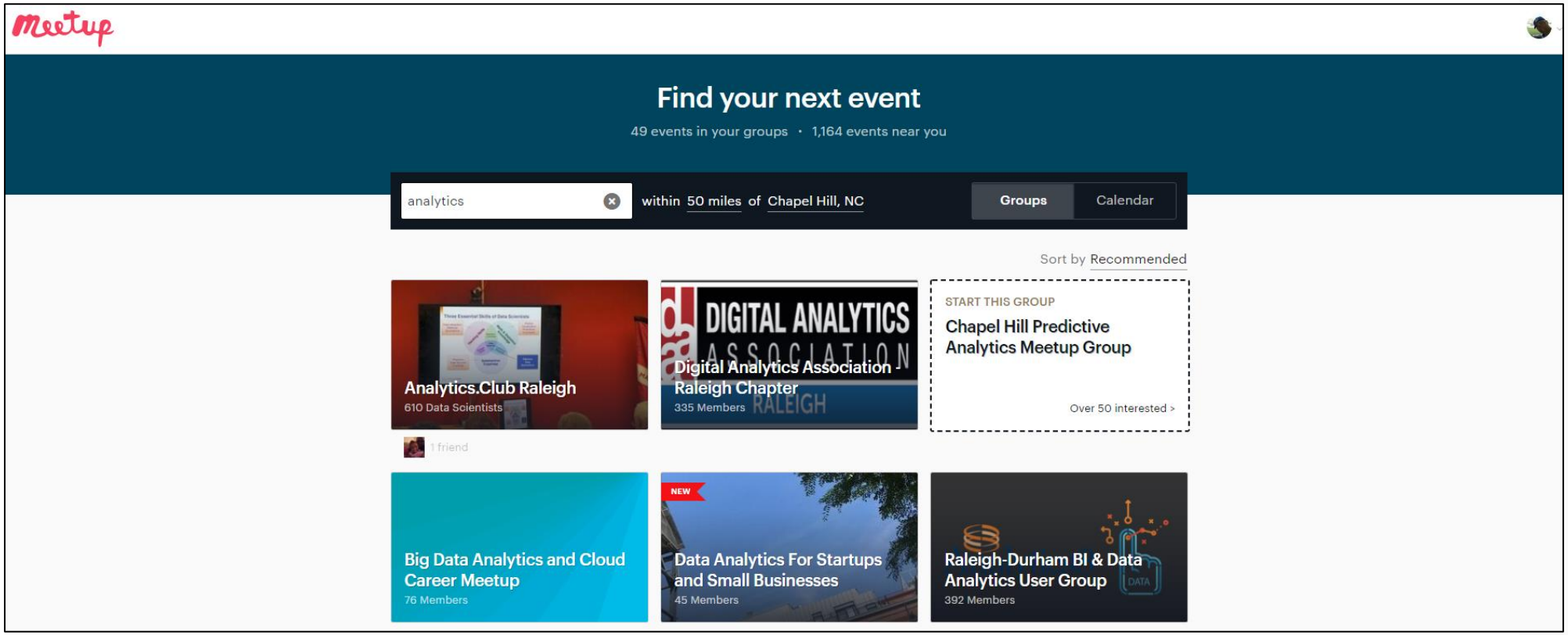
Publications

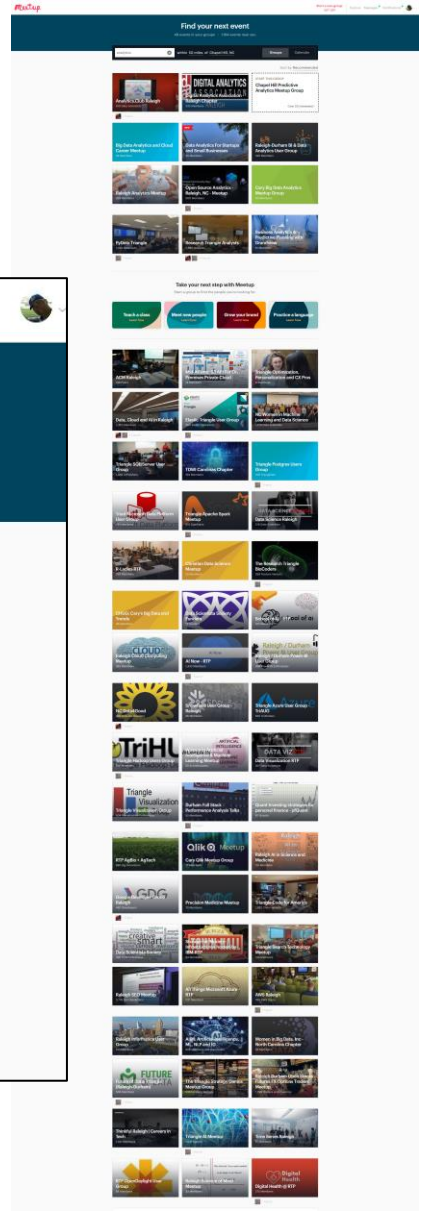
- OR/MS Today
- Analytics Magazine
- INTERFACES*
- MORS Phalanx
- SIGNIFICANCE
- AMSTAT News



* Or, its successor name

Analytics Meetups



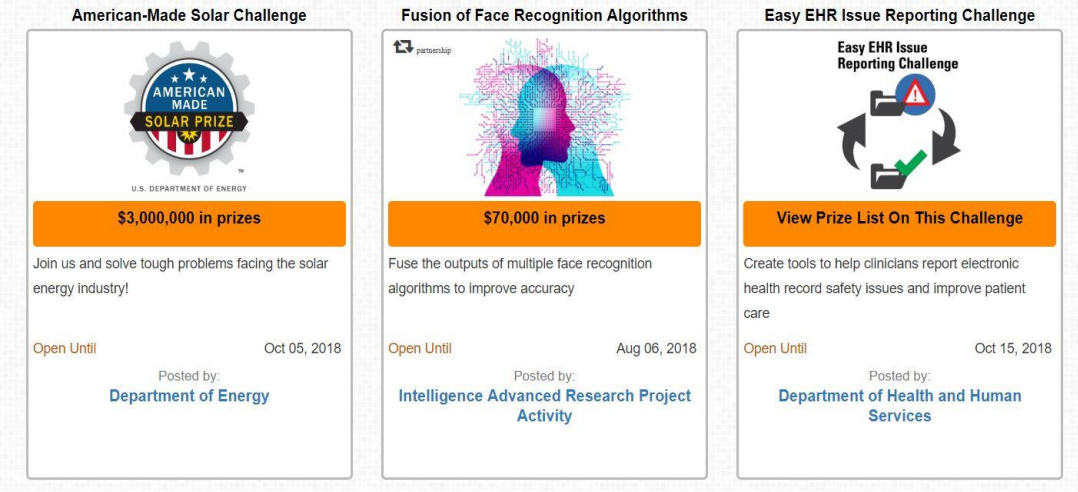


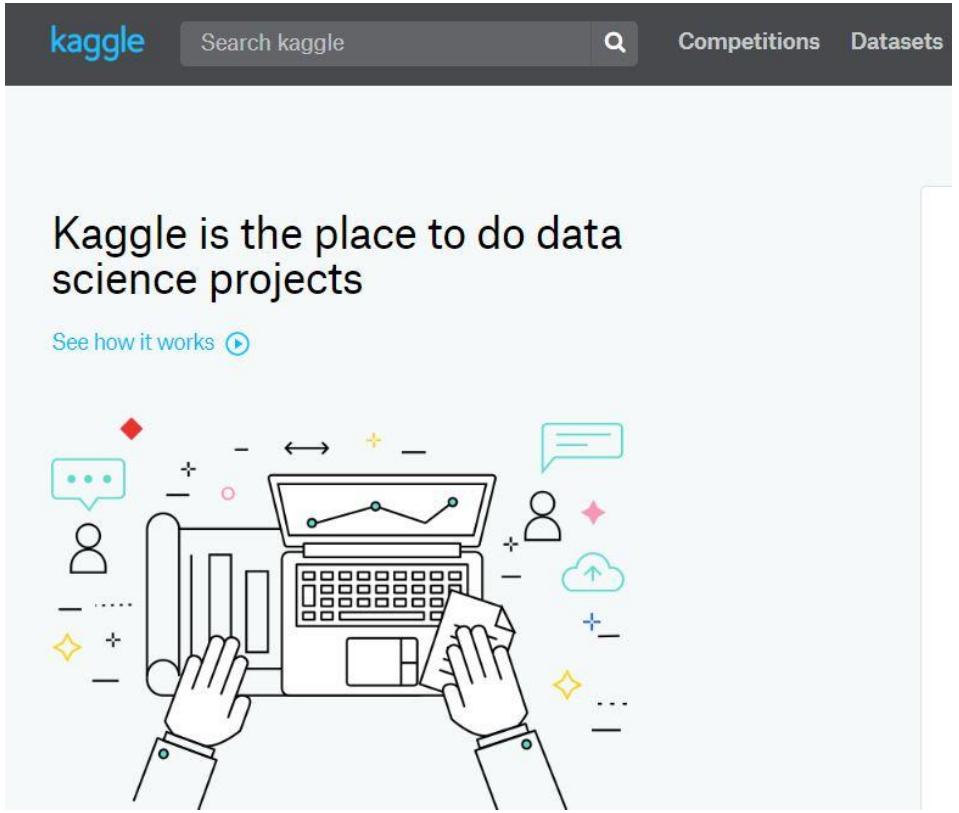
Analytics Conferences

- **MORS Symposium**
  - Annually, June. Classified level meeting of National Security Professionals.
- **INFORMS Annual Meeting**
  - October/November annual meeting. Massive meeting with ~80 parallel tracks.
- **INFORMS Business Analytics Conference**
  - Annually, Spring. A top-tier event.
- **Open Data Science Conference**

Online Challenges

- Kaggle
- Challenge.gov

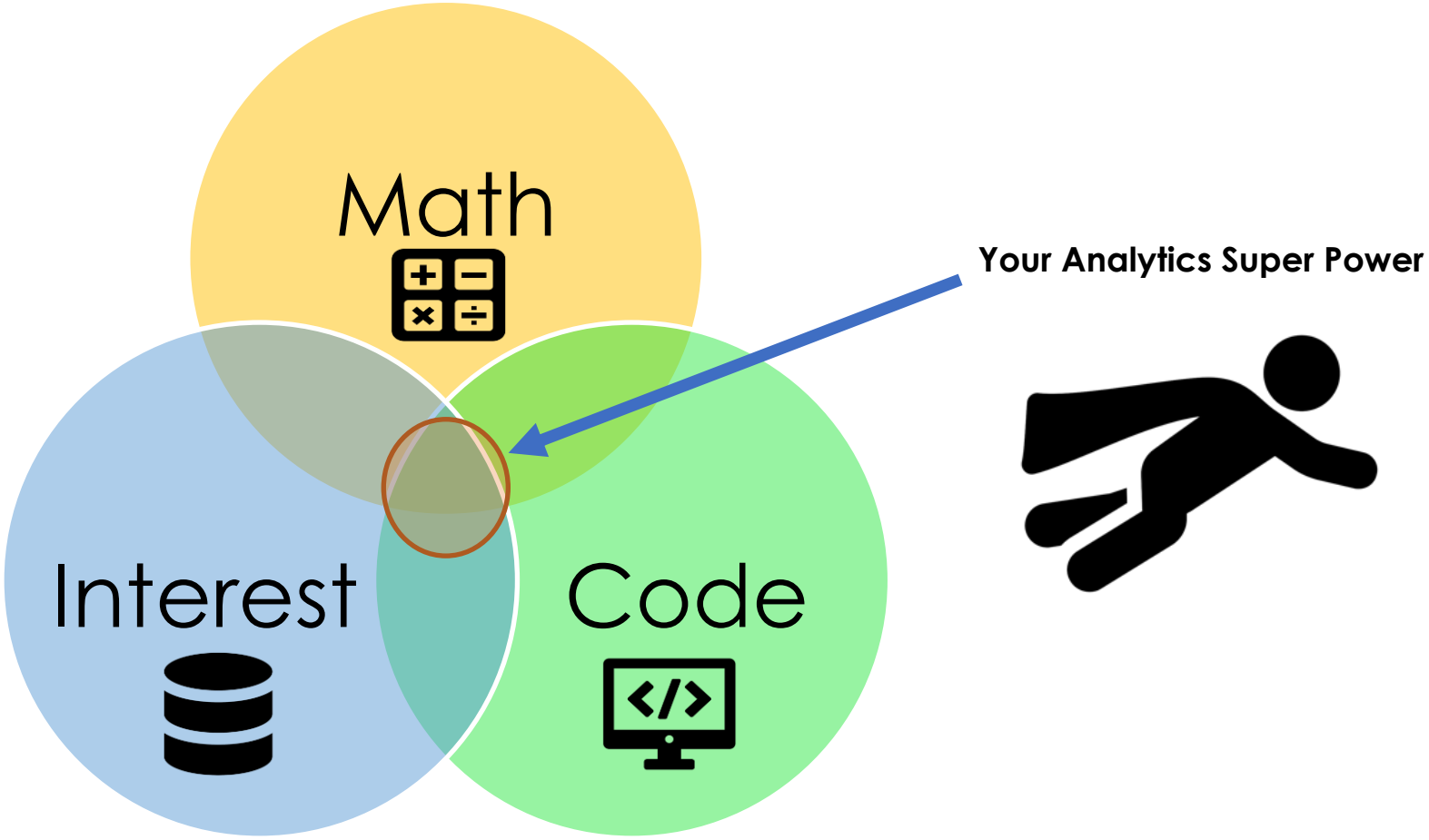




Coding Language

The Truth About Coding

What is Your Analytics Super Power?



Self-directed, project-based learning

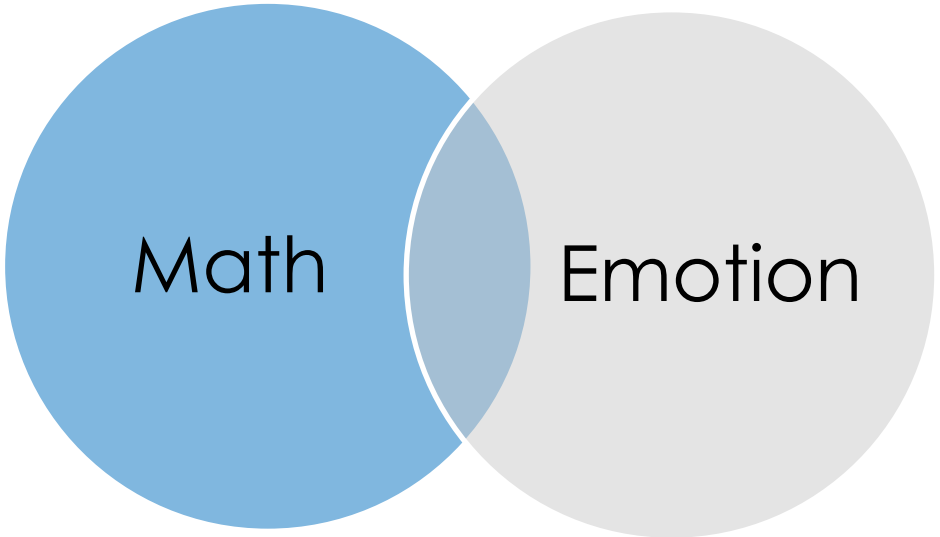
- What do you want to learn?
- Incorporate that into your project
  - New programming language
  - New language
  - Soft Skills
    - Writing
    - Speaking
    - Selling

No matter what the outcome of the project you learned new skills

Selling Analytics

Trust + Experience + **Effective Communication** **+ Analysis > Convince Me**

Highly Correlated with Time



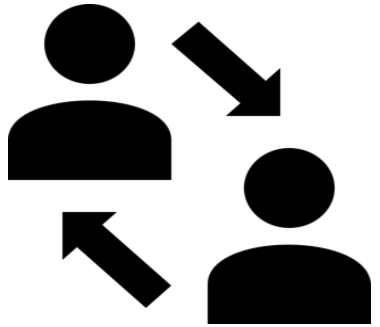
Challenges in Analytics

- Depth vs range
  - Industry or methodology
- Data quality
  - Lots of time to shape data into analysis format
- Data understanding
  - This is an Analytical Professional's value add

Interesting and challenging career field

Day in the Life Analytics Professional

- Research – 10%
- Coding – 10%
- Marketing – 15%
- Communications – 25%
- Project Management – 30%
- Breaks – 10%
  - Run
  - Cycling
  - Walk



Everyday is different

What I am looking for in an Analytics Professional

- Curiosity
- Self Motivated
  - New methodologies
  - New techniques
  - Propose a lunch and learn during an interview
- Evidence of successful and implemented models

Watch one, Do one, Teach one, Write one

- Writing
  - Blogs
  - Reports
  - Emails
  - Articles
- Presenting (Improv)
  - Client
  - Conferences
  - Local meetings
  - Internal
- Selling

Success Enablers

- Professional societies
- Local meetups
- Alumni association
- Volunteer
  - Pro Bono – $0 pay for acknowledged deliverable
- Lifelong learning

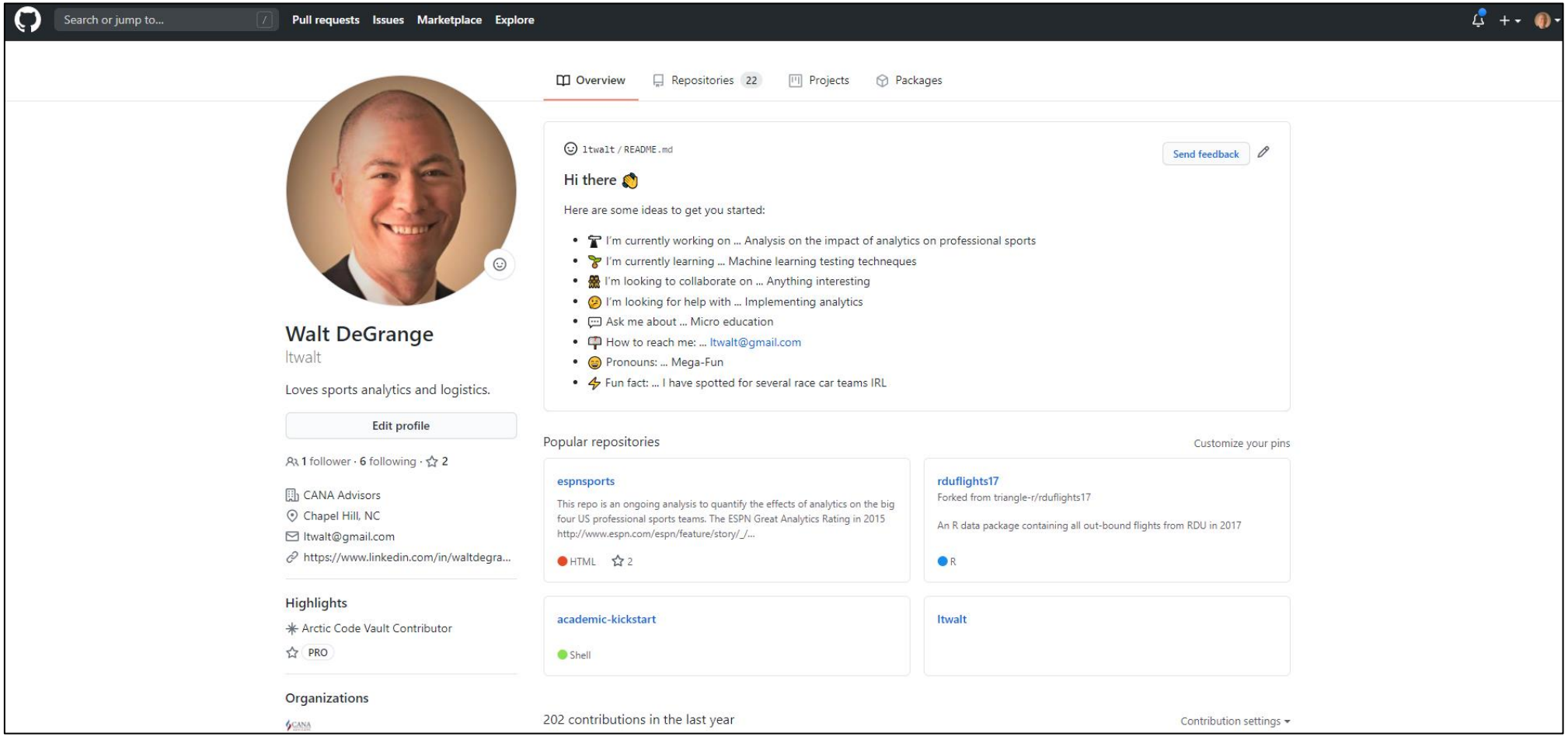
Expand your influence, connections, skills

Improving Soft Skills

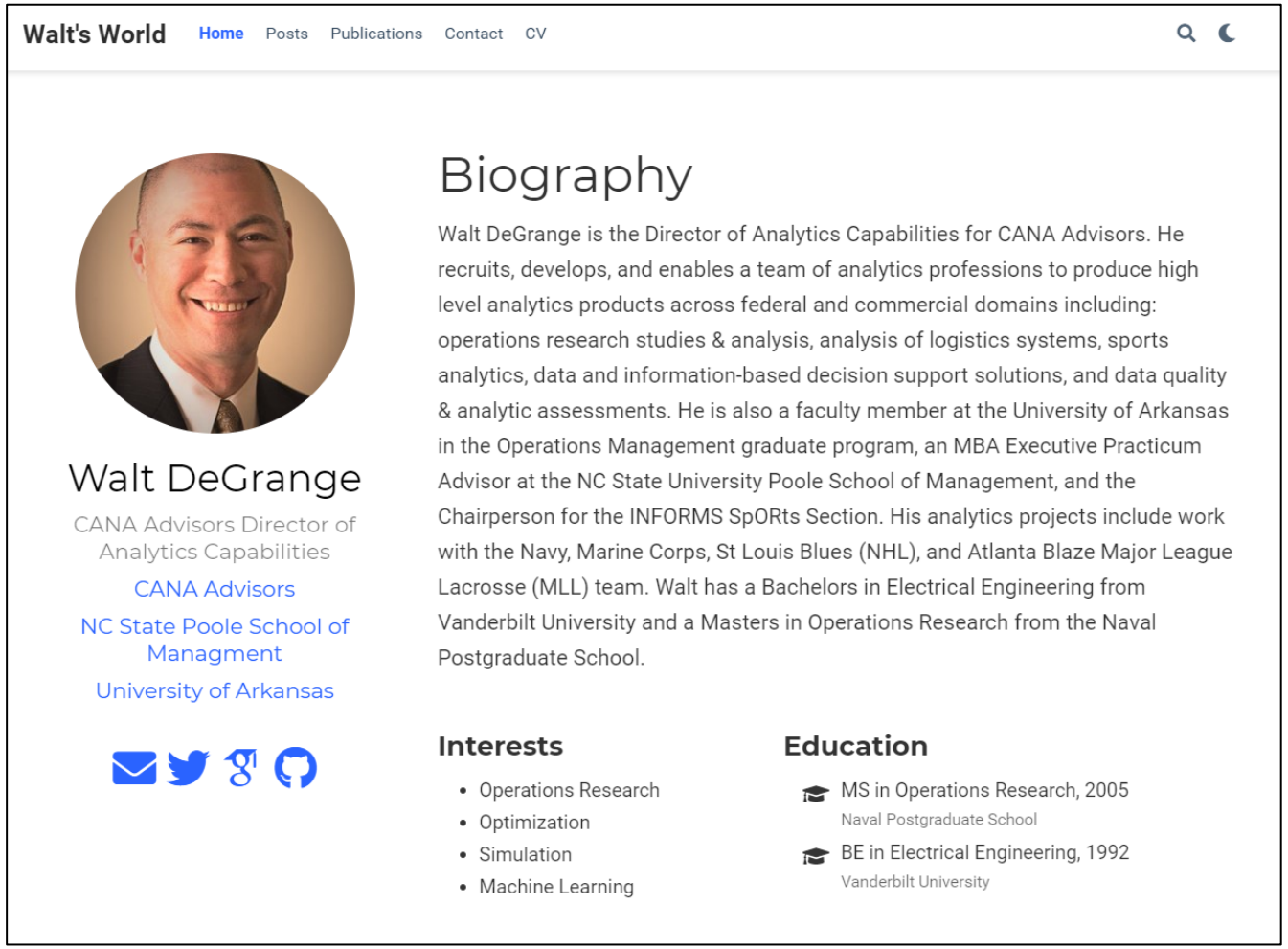
- **Read consistently**
  - The Economist
  - FiveThirtyEight
  - Others?
- **Write consistently**
- **Co-author**
  - Begin as "wingman" for a more experienced writer!

Publishing & Presenting You

Github ReadMe Project



Webpage, Blog, CV



Connect via LinkedIn

Questions?