# The Data Teams at WW

## Bringing cutting-edge tools to an establishment business

Taka Tanaka (Sr. Manager, Business Analytics)

# My own journey from astronomy to data science



2011: PhD

2011 - 2016:
two postdocs,
research faculty

2017:
Transition to
industry DS

2017 - 2019:
Data scientist
⇨ manager
(consulting firm)

2019:
Sr. Manager,
team lead

# Who we are

- Founded 1963
- Rebranded to WW in 2018
- Approach to wellness includes studio workshops, mobile app, activity tracking, meditation, personal coaching, online community.

**Wellness that Works.™**

# Driven by Science

**see: ww.com/us/science-center**

- Nutritional science
  - Evidence-based decisions
  - NHS-approved provider of Diabetes Prevention Programme (UK).

- Behavioral science

- Decisions motivated by empiricism and eagerness to innovate.
  - A/B testing on product feature deployments
  - Regular "big idea" pitches across teams.

### Efficacy of Commercial Weight-Loss Programs: An Updated Systematic Review

*Kimberly A. Gudzune, MD, MPH \*; Ruchi S. Doshi, BA \*; Ambereen K. Mehta, MD, MPH; Zoobia W. Chaudhry, MD; David K. Jacobs, BA; Rachit M. Vakil, BS; Clare J. Lee, MD; Sara N. Bleich, PhD; Jeanne M. Clark, MD, MPH*

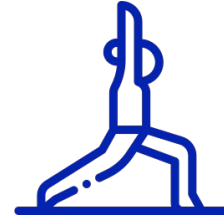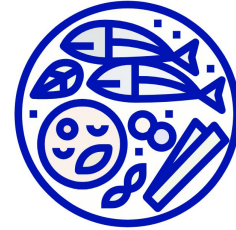Annals of Internal Medicine, 2015

### Weight Loss With Self-help Compared With a Structured Commercial Program
A Randomized Trial

Stanley Heshka, PhD; James W. Anderson, MD; Richard L. Atkinson, MD; et al

JAMA, 2003

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# The Data

- Member information: age, gender, height, weight, location
- Food and recipe tracking: usage, foods
- Activity tracking: active and passive (Fitbit)
- Studio attendance
- Surveys
- Site traffic, app usage, e-commerce
- Marketing: media impressions, conversions, competitive intelligence
- First-party social media activity: posts, comments, likes, groups, follows
- External social media activity: general public; celebrity partners

# The WW Data Teams at a Glance

**TECH**                                                                **BRAND**

| Data Engineering (Core) | Data Engineering (Intelligence) | Data Platforms | Data Science | Business Analytics | Analytics |
|---|---|---|---|---|---|
| Data ingestion & export | Data schemas, distribution | Governance & QA | Data products. e.g. recipe recommender for mobile app | "Internal consultants"; Insights to guide company strategy | Analyses & support for specific verticals |

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**We hire for and help develop different skill sets for different teams.**  ➡

○ ML + NLP
○ SQL
○ Software

○ ML + NLP
○ SQL
○ Storytelling

○ Statistics
○ SQL
○ Dashboards

# Project Example (Data Science): Primrose

- Production In-Memory Solution

- "a simple Python framework for executing in-memory workflows defined by DAGs via configuration files."
(Medium post by Mike Skarlinski, Director)

- Used in ML model deployment, automating ETL pipelines

- Open-source!
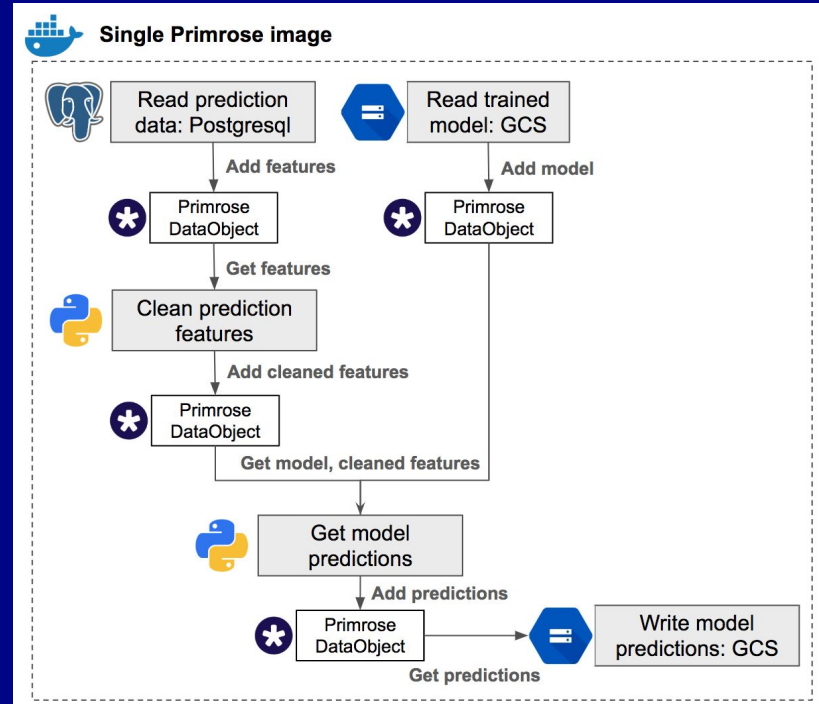
# Project Example (Data Science): Recommender systems

- Who to follow on Connect (WW's own digital social network)
- What groups to join
- Food items, dining options

- Build a model, or a suite of models
- Integrate into the app with product team
- Deploy and test

- Some use cases for the app require low (tens of ms) latency!

# Project Examples (Analytics): Support for business verticals

- Empower teams to interpret and take action on the data

- Descriptive analytics and reports

- Dashboards for teams and executives

- Statistical studies and user tests

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# Project Examples (Business Analytics): Brand-level insights

- myWW launched in November

- Executive question: "Is there something to the claims in this critical article?"

- Language processing, sentiment analysis of WW social network (~1 day)

- Found that sentiment around launch was overwhelmingly positive among members
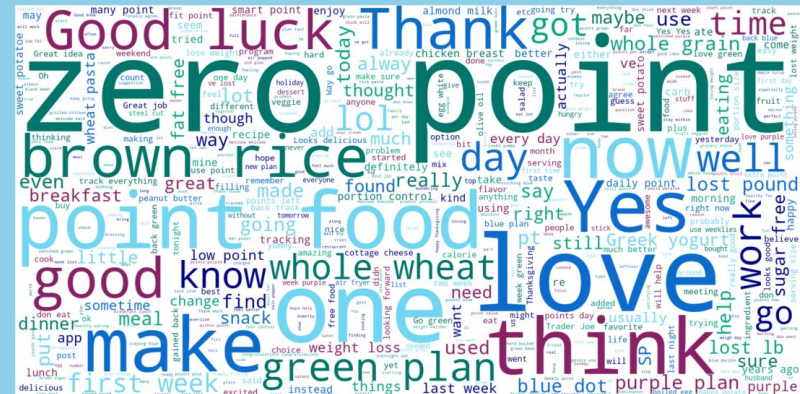
- Shared w/ leadership, then company

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USA TODAY

**WW, formerly Weight Watchers, unveils new plan with more choice, less hunger and, yes, pasta**

Ad Age

**WW'S NEW COLOR-CODED PROGRAM DIVIDES THE COMMUNITY, CRITICS SAY**

# Summary

- A science-driven company with meaningful personal impact for our members
- Driven by scientific evidence and a members-first mentality (The WW Impact Manifesto)

- Strategically and rapidly growing tech organization
- A trove of different kinds of data, exciting ideas, smart people

- Happy to talk about career paths, share advice I found helpful, the job hunt and hiring process, how to narrow your search—the whole shebang.
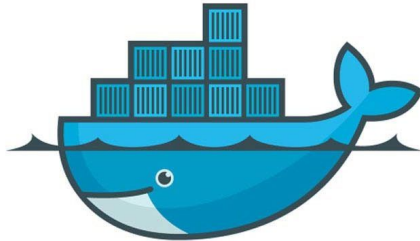
# Some of our commonly-used tools