



# WORKING IN DATA

AILEEN MCDONALD

WHO AM I?

# WHO AM I?

- **COHORT LEAD & DATA INSTRUCTOR**

CodeClan is a not-for-profit social enterprise in Scotland. The first & only SQA accredited digital skills academy on a mission to help bridge the digital skills gap in Scotland's growing tech industry.



- **VOLUNTEER**

DataKindUK is a charity that builds data science capacity in social change organisations.



# CAREER JOURNEY



University  
of Glasgow



BARNETT  
WADDINGHAM  
beyond the expected

MERKLE  
AQUILA

MATHS &  
STATISTICS

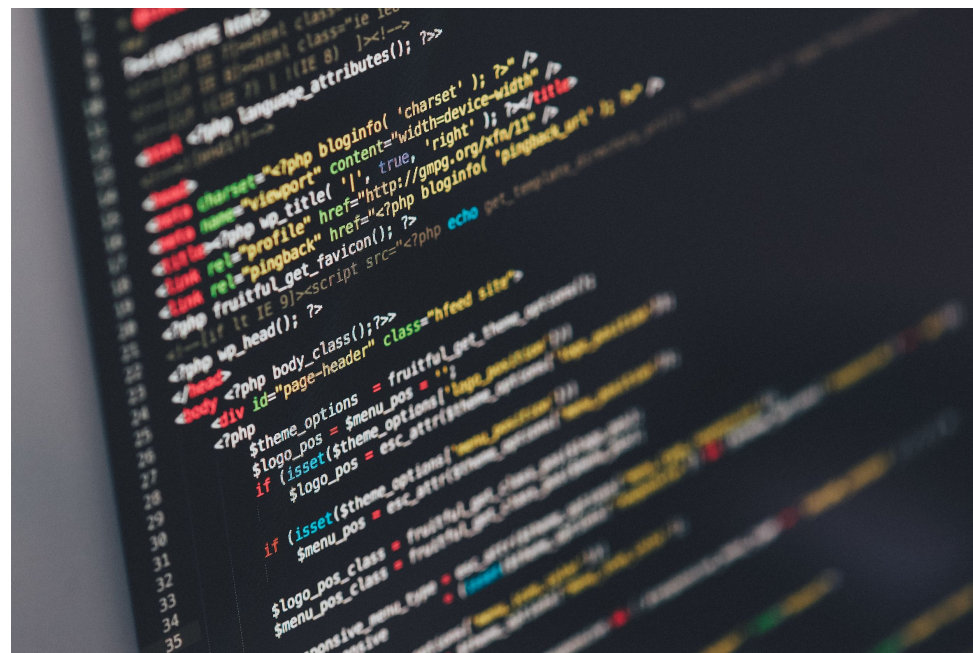
ACTUARIAL  
SCIENCE

TRAINEE  
ACTUARY

ANALYTICAL  
CONSULTANT

DATA???





# DATA





5,000,000,000

Searches made



294,000,000,000

Emails sent



500,000,000

Tweets sent

# DATA IN A DAY



95,000,000

Videos/photos shared  
on Instagram



65,000,000,000

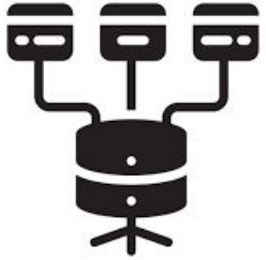
Whatsapps sent

# WHY IS DATA IMPORTANT?

- Evidence to make decisions in business
- Evidence to make political decisions
- Find out what's working and what's not – improve services
- Find solutions to problems (locally and globally)

DATA = INFORMATION

# DATA DRIVEN DECISIONS



Data



Data  
cleaning



Analysis/  
Modelling



Visualisation  
&  
communication



Insights



Action &  
decisions



Value

# DATA OPPORTUNITIES

# DATA INDUSTRY IN SCOTLAND

- Scotland's 10-year [Data-Driven Innovation programme](#) combines government, industry, and educational institutions to **make Scotland the No.1 location** of choice for data science startups and data science companies.
  - [Skills Development Scotland report](#)
  - [Scotsman data industry article](#)
  - [Scotsman data report](#)
- Investing £661 million with aim to turn Edinburgh into the '**Data Capital of Europe**'.





Top skills survey

660+ million professionals

20+ million jobs

Analytical skills was  
in **top 3 skills**  
in 2018, 2019 and  
2020.



Championing Scotland's vital digital  
technologies industry

Digital skills report  
2019

**56%** of employers in  
Scotland  
*'data and analytics skills  
to be the **most urgent**  
emerging technology **skills**  
**need in the future**'.*

# DIFFERENT DATA JOBS



DATA ANALYST



DATA ENGINEER

DATA SCIENTIST

# DATA ROLES

DATA VISUALISATION  
ANALYST

DATA ARCHITECT

DATA JOURNALIST

STATISTICIAN

# DIFFERENT SIDES TO DATA JOBS

INVESTIGATOR

CODE & LOGIC



TEAM PLAYER



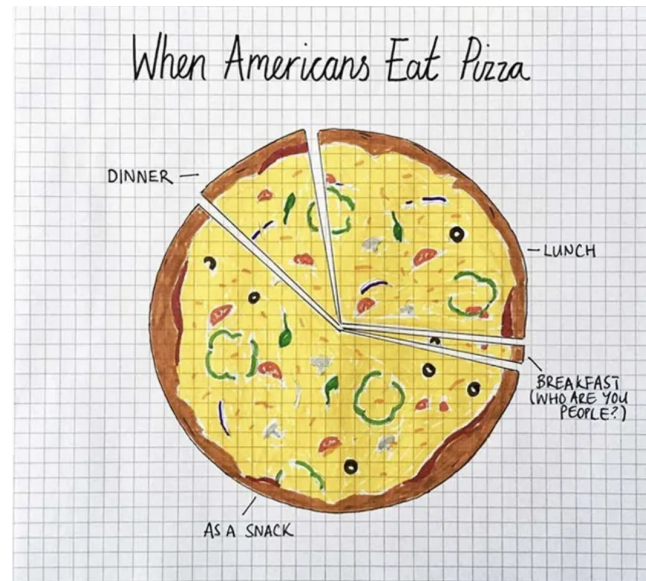
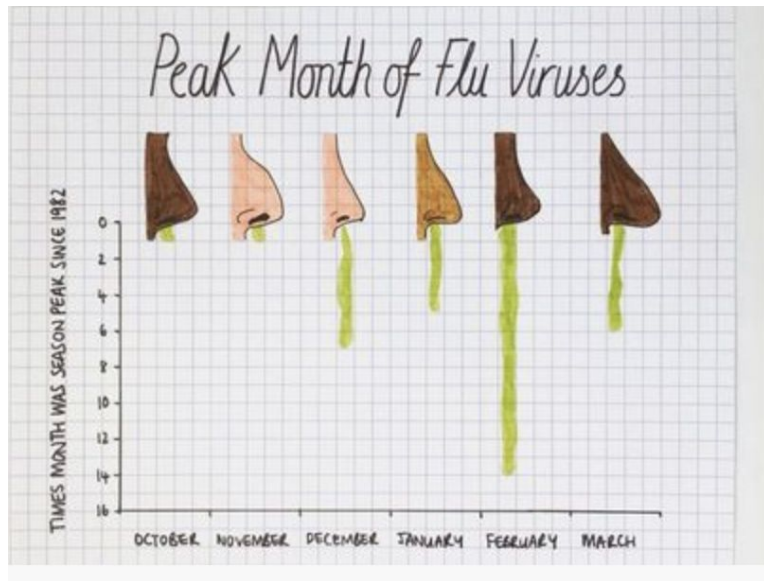
CREATIVE



STORYTELLER

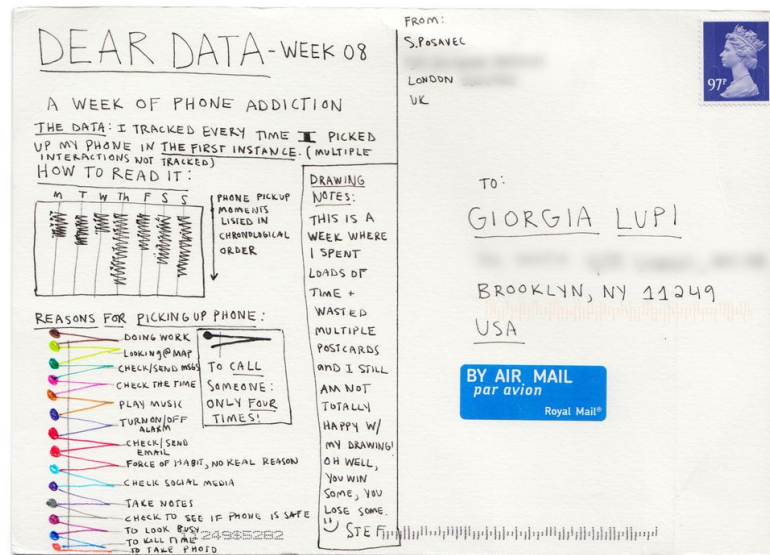


# DATA HAS A STORY TO TELL



**Mona Chalabi** – Data journalist & illustrator

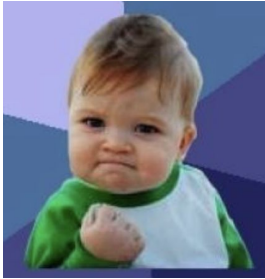
# DATA HAS A STORY TO TELL



**Dear Data** - data drawing project by Georgia Lupi & Stefanie Posavec

# SAME LOGIC TO ANALYSE...

HOW MEMES  
SPREAD ACROSS  
SOCIAL MEDIA



HOW DISEASE  
SPREAD ACROSS  
POPULATIONS



# INDUSTRIES TO WORK IN DATA



# PRETTY MUCH EVERY INDUSTRY!



IMAGE AND  
SPEECH  
RECOGNITION



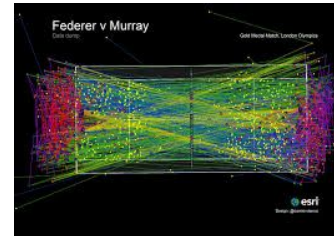
TEXT PROCESSING



RECOMMENDATIONS & ADVERTS



SPORTS ANALYSIS



## GOVERNMENT SERVICES



## HUMANITARIAN AID



# IMPACT SOCIETY & MAKE A DIFFERENCE

## CLIMATE CHANGE



## DEFORESTATION







FOOD BANKS

# DataKind



HOMELESSNESS



MENTAL HEALTH SERVICES



CHILDREN'S HOSPICE

# SOME CUSTOMER ANALYTICS PROJECTS



WHO ARE YOUR  
CUSTOMERS?



PREDICTING HOW  
THEY WILL BEHAVE



HOW DO WE BEST REACH CUSTOMERS?



WHAT PRODUCTS  
MIGHT THEY BE  
INTERESTED IN NEXT?

# SOME CHARITY PROJECTS



APP TO EXPLORE  
SCOTTISH CHARITIES



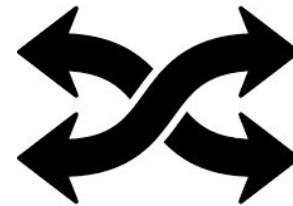
SURVEY  
DESIGN



IMPACT ANALYSIS



DASHBOARD TO  
VISUALISE  
SERVICE USERS DATA



PREDICTING  
OPTIMAL MIX OF  
SERVICES

# WAYS TO GET STARTED

# TECHNICAL LEARNING

**LANGUAGES** – SQL, R, Python

**VISUALISATION TOOLS** – Tableau, Power BI

**STATISTICAL THEORY** – machine learning models

**ETHICS**

**CLOUD STORAGE** – Amazon Web Services etc.



# BOOK RECOMMENDATIONS

Free (O'Reilly) programming books

- [R for Data Science](#)
- [Python for Data Science](#)



Statistics

- [Naked Statistics: Stripping the Dread from the Data](#)
- [The Art of Statistics: How to Learn from Data](#)

Ethics

- [Weapons of Math Destruction](#)
- [Hello World](#)

## OTHER LEARNING RESOURCES

Online courses - [edX](#), [Coursera](#), [Udemy](#)

# YouTube

Funded bootcamps/masters - [TheDataLab](#)  
[masters](#), [CodeClan](#)

TV - [The Great Hack](#), [The Social Dilemma](#),  
[Hans Rosling TED talk](#), [Coded Bias](#)



# EVENTS/NETWORKING/SOCIAL MEDIA

Twitter



LinkedIn

Conference scholarships

Meetups

*Meetup*





# SUMMARY

- Data is not just sitting behind a computer doing maths
- Can work in almost every industry
- Skills you learn can be used across many different roles
- Can make a difference in society
- Scotland is a fantastic place to be involved in data



# CONTACT

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