RIGA BUSINESS SCHOOL Riga Technical University

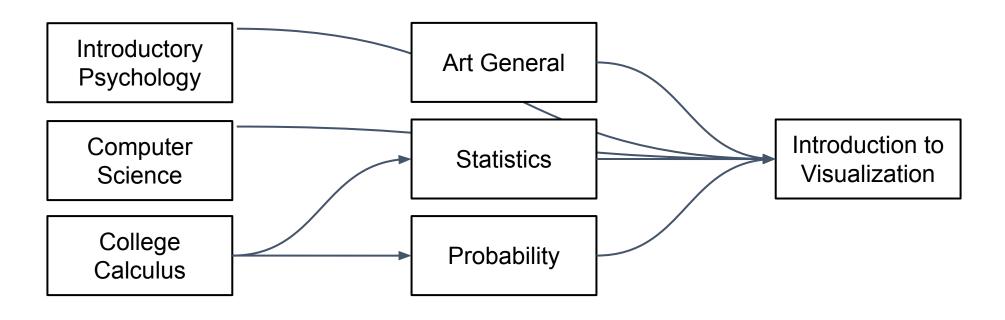
Introduction to Visualization

Taster day for prospective bachelor students April 18, 2023



This class will teach you to:

- Present data
- Communicate complex ideas
- Give a visual feeling of the underlying message



1st year

2nd year

3rd year



The data does not speak for itself

Humans are involved in choosing:

- what observations to make
- what categories the observations will fall into
- how data is formatted, stored, maintained, updated, adjusted as technology changes

Humans have:

- underlying biases
- implicit assumptions about order and color
- personal experiences that emphasize particular messages

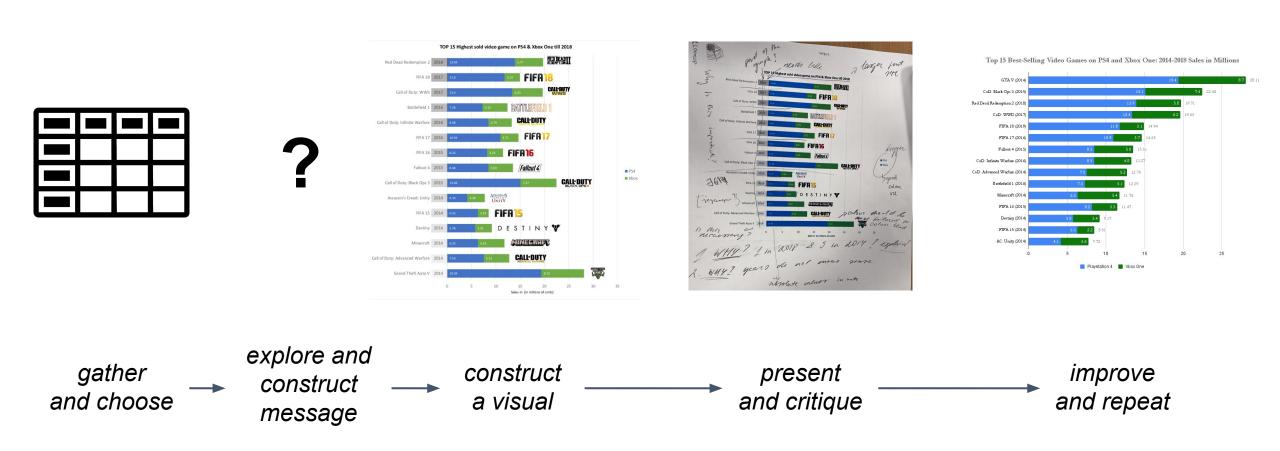
You are human. You communicate with humans.

Every act of communication should be deliberate, clear, auditable.

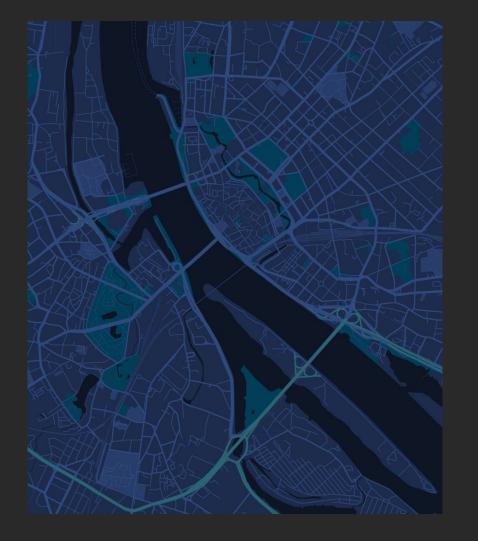
This course will improve your ability to communicate visually.



The visualization process





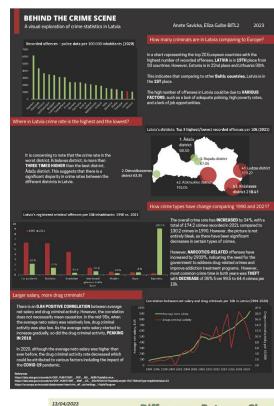


Coding

- Google Sheets / MS Excel
- Python (matplotlib, pandas, requests)
- MS Power BI

Interactive tools

- Canva
- Infogram
- MS Power BI



Student example projects



THE FUTURE OF AERIAL ENTERTAINMENT

vai partiju veiksmes vai neveiksmes ietekmēja to vēlēšanu rezultātus. Pattesibó loti Itola dala Sastenas atenenti Hernama ir atkartes no Sanimas komistia ettina nistrativa darba. Tapén telt k meeltas 8 vistakitiets kamisuas kas avatas popäiutās Saeimas likumprotektiem klai nar letters Morrison Interseant in leastill leach to komitalju veditaju përstavëtës partijes. Top 5 tts tikai an Kom Attituthai/Par! more Runātīgākās partijas debatēs Constanting Terrer Holicof Debates ir dahiska demokrātiski pieņemtu lētrumu daļa. 13. Saetrat kapsarovā 14 dienas tika pavadītas debatējot. 9 diemas ramija tikai opozicijas deputāti, Karatr premiera partija anna Vienntifia, mot manika partita Sanima, Partiju viedokli balsojot Wadalil is natilia rita mater. Athalate grojektors var nazimë uffite an instite wildtake. I al son konfisite partite undevents ir kontigi izvirzit u projektus, ir rodrams, k datas portijas to unirema appendan rent ar 'Par' balsh Amilija Aparicija Izvirzītie likumprojekti Likamprojektu testride konisijis, Saeimas stitu zilé Motore Kohinetti an kurklama ir otrs galvenais deputata ikdienas darba nienticarra Ministri esa seul niertella ki viovatrik kenistäm redata likumerotek

Saeimā?

Premjers un sekmes vēlēšanās



Differences Between Chess GMs & a Casual Player Emīls Bitāns, Kārlis Ķiršakmens, RBS BITL2, Data Visualization and Analysis

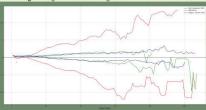
Introduction: With the development of online platforms and computer engines, the game of chess has seen a surge in popularity and complexity. Achieving great results in chess requires a combination of talent, practice and logical thinking.

Question What are the main statistical differences that separate the best chess grandmasters from a casual player?

Methods:

Analysis of all career games by GM Garry Kasparov (2851), GM Magnus Carlsen (2882) and Emils "BitkaChess" Bitans (1511). Data visualization with Matplotlib Python library. Data interpretation and conclusions.

Figure 1. Engine Evaluation Average Per Move Across Career Wins



Analysis

Figure 2 illustrates that GMs have specific openings that are more common. BitkaChess mostly plays King's pawn openings with above 50% success, whereas both GMs play the Sicilian. Casual players tend to have a smaller opening repertoire than GMs.

Findings:

Although Carlsen's win % is low, it's due to many drawn games. Visualization could be improved to include loss %. Improve the dataset to include up-todate games. Garry Kasparov shows remarkable results.

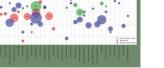
Sources: Matplotlib, https://www.kaggle.com/datasets/liury123/chess-game-from-12-top-players, chess.com, https://www.cs.kent.ac.uk/people/staff/djb/pgn-extract/

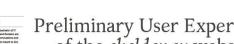


Figure 1 illustrates that GM games take longer to gain a significant advantage, whereas casual games are more one-sided. This can be explained by extensive chess theory knowledge. Additionally, games often end in resignation. GMs tend to be more consistent in comparison to the average player. Findings:

- Due to the choice of opening, BitkaChess tends to be at a disadvantage from the early stages of the game. 2 - There is a lack of data for long games; hence, the graph after move 80 may be misleading.







±6%

1. Introduction

2. Hypotheses

Users are not getting bared aft 30 swipes. They are interested in measuring the attention span to