ScaleUp Porto.

DSPT
DATA SCIENCE PORTUGAL

How To Interview Data Scientists

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ScaleUp Porto, Portugal

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Agenda

- Pinhole Questions
- Trained Monkey Questions
- Forced Error Questions

- Not discussed: General soft skills (even though they are crucial)

Pinhole Q’s

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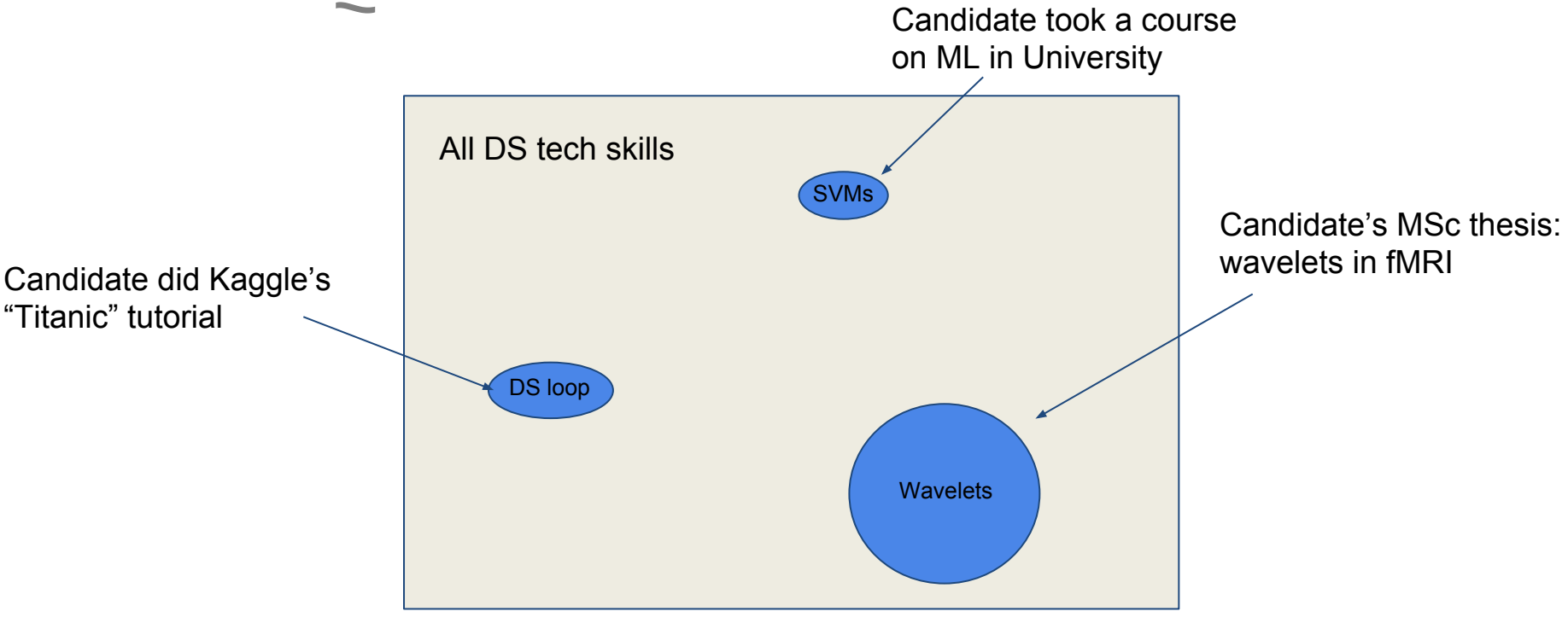
- Delivery: DS loop is algorithm-agnostic
- (ML) Research: has the candidate used X before? How deeply?

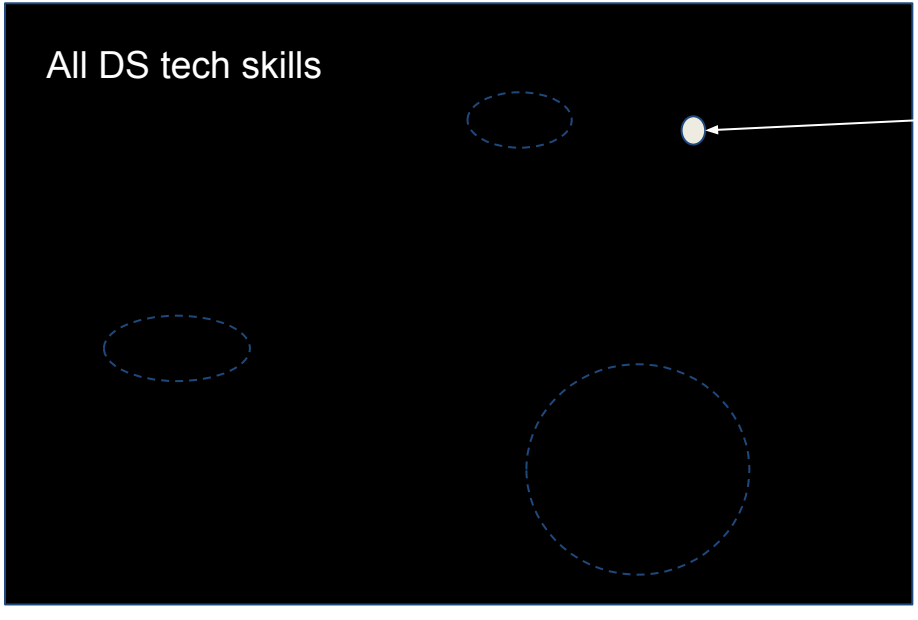
Pinhole Q's

All DS tech skills

Pinhole Q's


Candidate took a course on ML in University
All DS tech skills
SVMs
Candidate's MSc thesis: wavelets in fMRI
Candidate did Kaggle's "Titanic" tutorial
DS loop
Wavelets

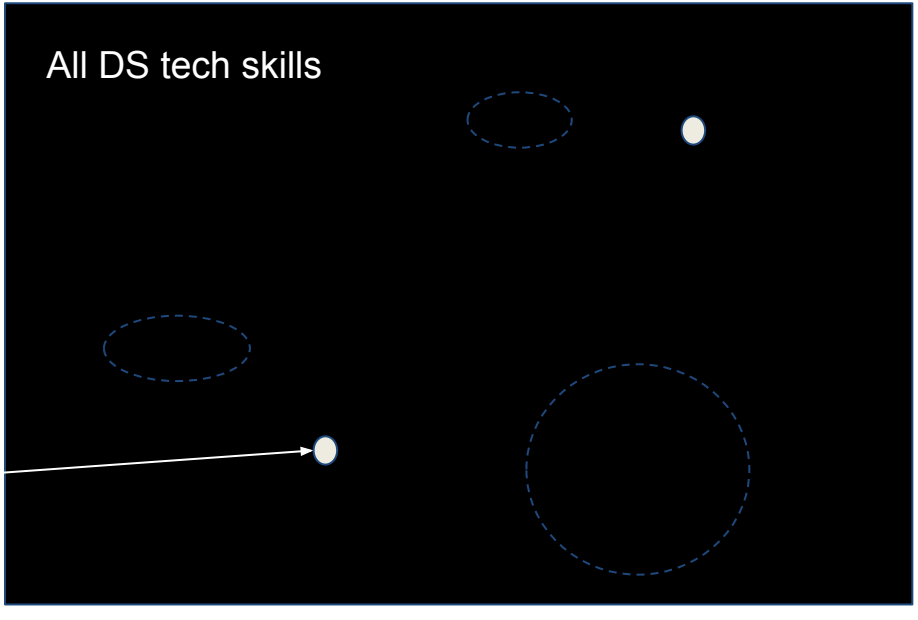
Pinhole Q's



Can you tell me how Random Forests work?

Pinhole Q's

Can you tell me the definition of Precision and Recall?



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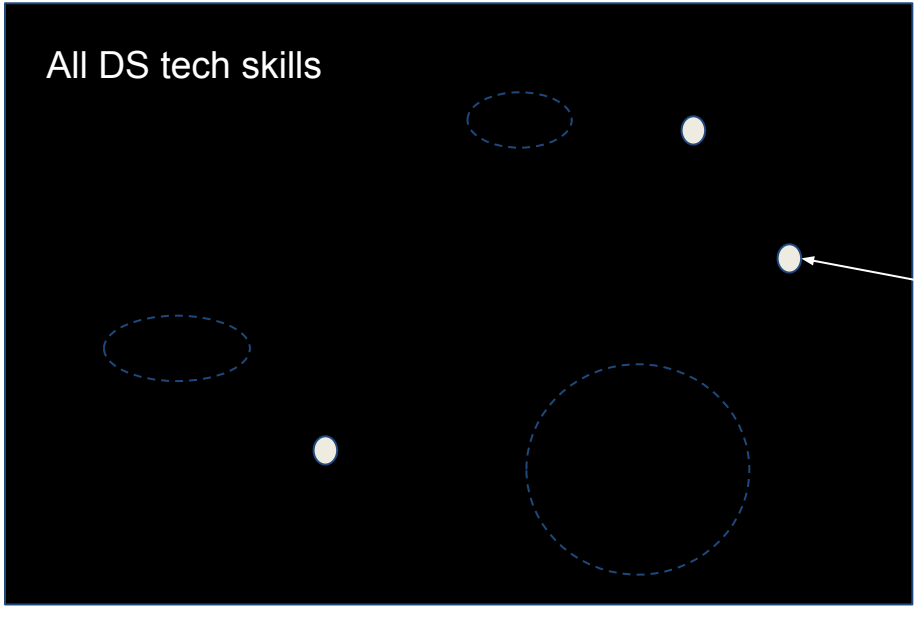

How do you do a join in SQL?

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  - **What did you do in your MSc/PhD thesis?**
    - **What was your success metric?**
      - **What can overfit to that measure?**

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  - **What did you do in your MSc/PhD thesis?**
    - **What was your success metric?**
      - **What can overfit to that measure?**
  - **Choose an ML algorithm that you feel confident in, and explain it to me.**
    - **...**

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Trained Monkey Q's

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- He computed a feature with constant value
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- Interviewer: **Are you sure a constant feature is useful?**
- Or: **Is it really a good idea to use constant features?**

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- **Why did you include that feature?**

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- **Most common mistake with new interviewers**
- If nothing comes to mind, ask "why did you do X?" or variants:
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- Or, if possible, ask a Forced Error Question (next)

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- … but the two obvious answers (LogReg or RFs) are both wrong!

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- Bad answer: **Well, LogReg does a hyperplane split while RFs split on each coordinate and perform bagging. Let me think... well, the feature is numeric so both algorithms can use it, I'd try both and see which one works best, I like the data to tell me the answer.**

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  (shows critical thinking, ability to admit mistakes, ability to handle pressure)

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- Once they learn:
  - critical thinking + admit mistakes + ... = autonomous Data Scientist
  - lack of such skills = will need validation, micromanagement

Thank you!