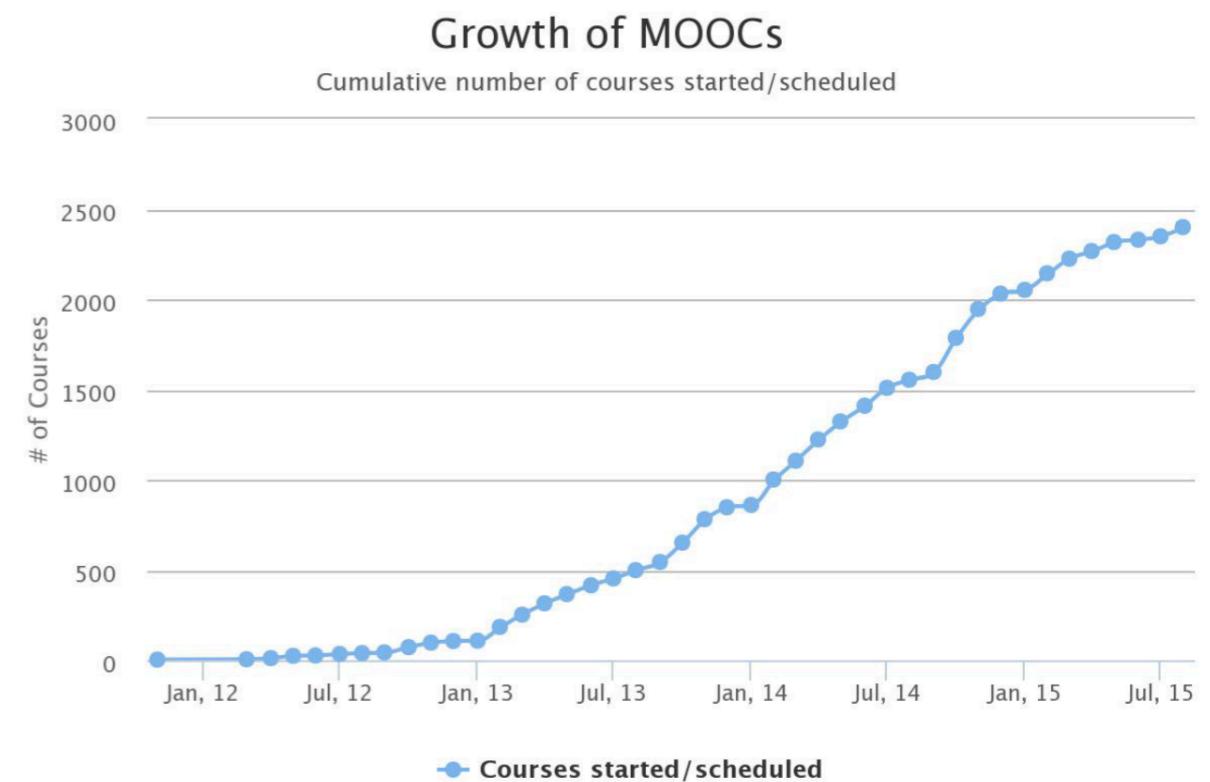


# Time Series Classification

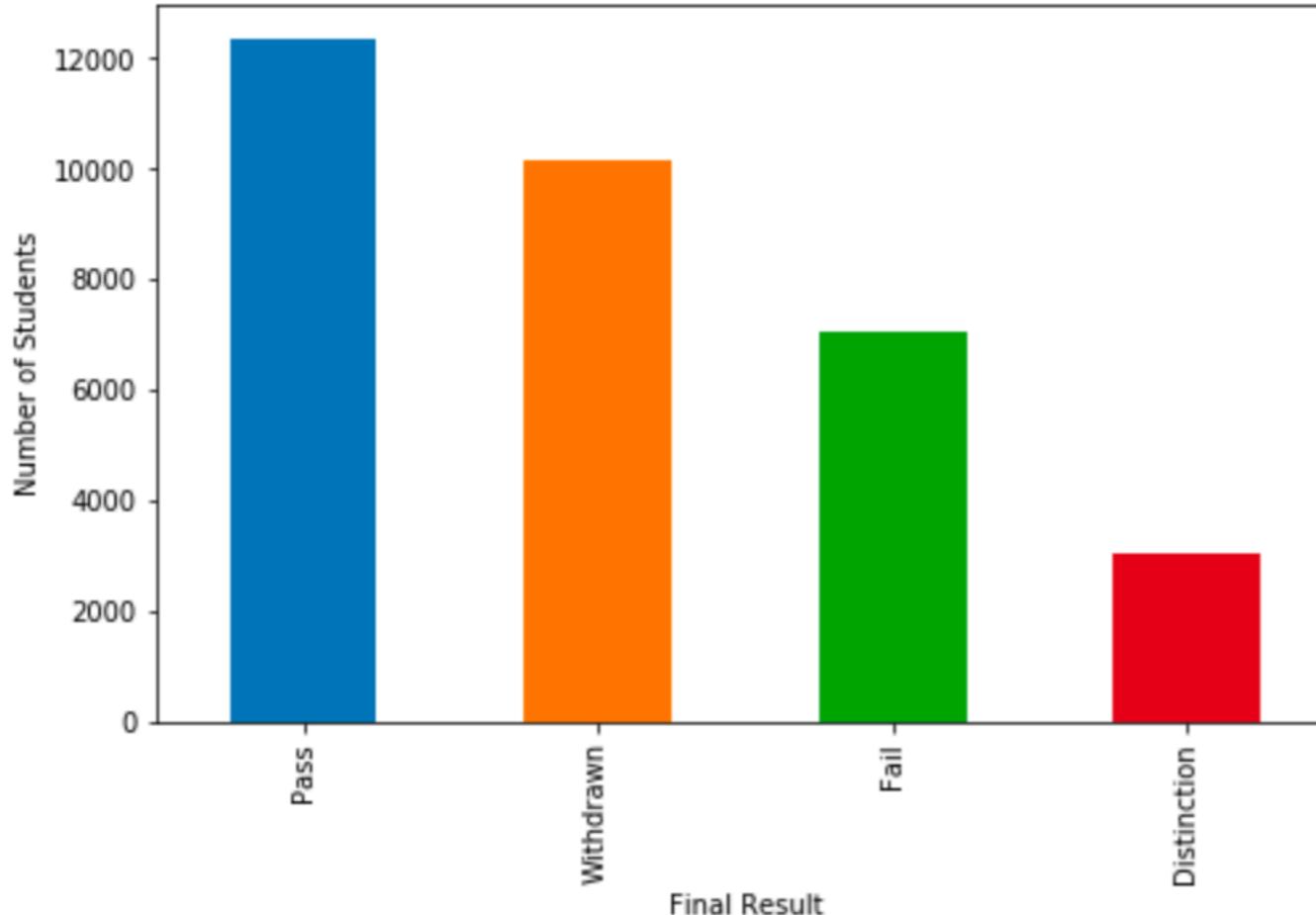
Predicting Who Will Fail An Online Class

-Enrollment in online courses growing steadily

-22 of the top 25 universities are now offering online courses for free



Student Outcomes - All Courses from Open University Dataset



....but the dropout rate is 40-80%

For my dataset from OU,  
The withdraw/fail rate is  
**53%**



## Logistic regression based on student demographics

### Not significant:

- Age
- Gender
- Region of origin
- Disability

### Significant:

- Highest education level completed
- Poverty level at place of origin
- Number of previous attempts at the course



## Logistic regression based on student demographics

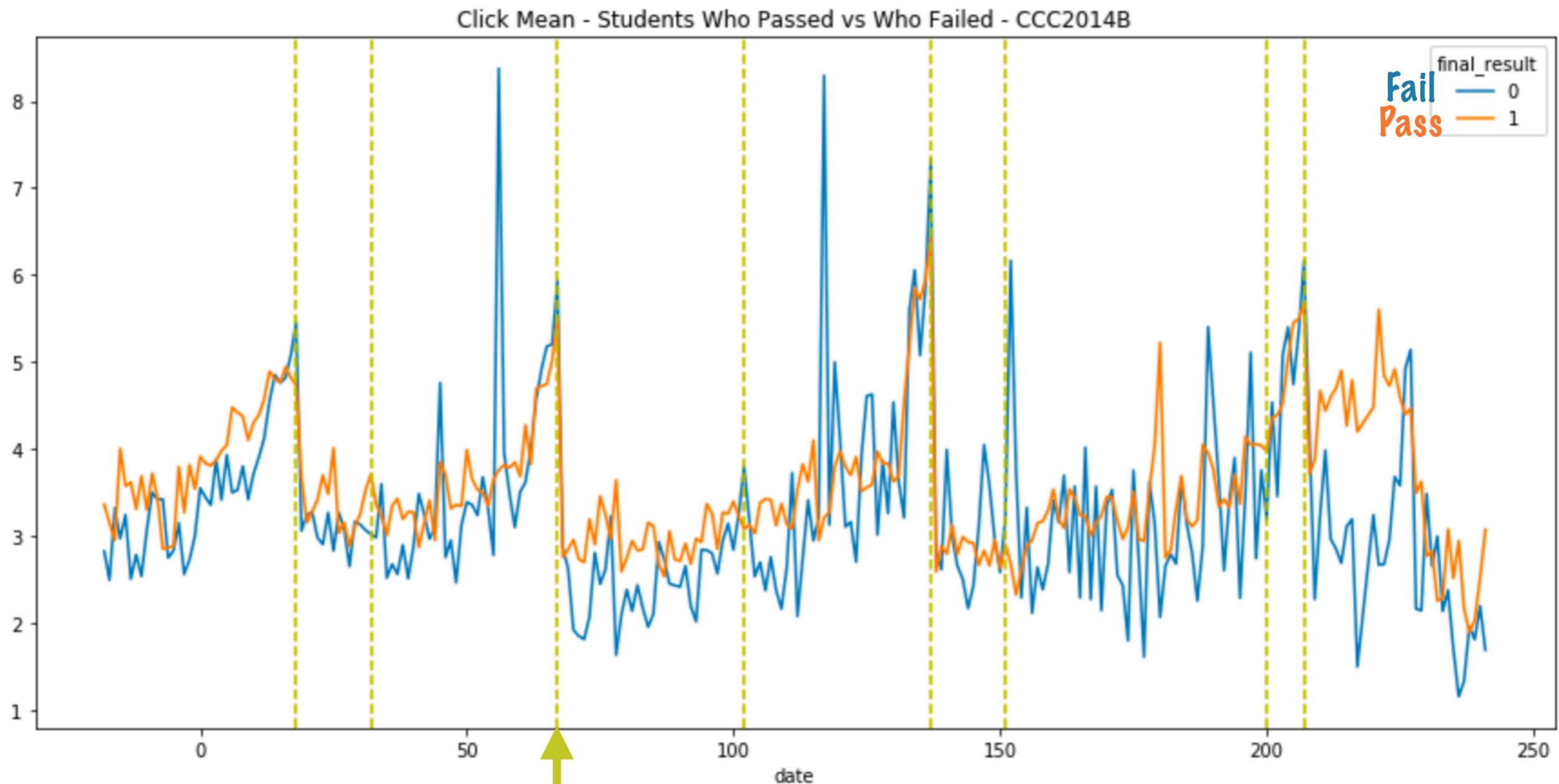
- Age
- Gender
- Region of origin
- Disability

50% accurate



- Highest education level completed
- Poverty level at place of origin
- Number of previous attempts at the course

# Average Daily Clicks on Online Study Materials

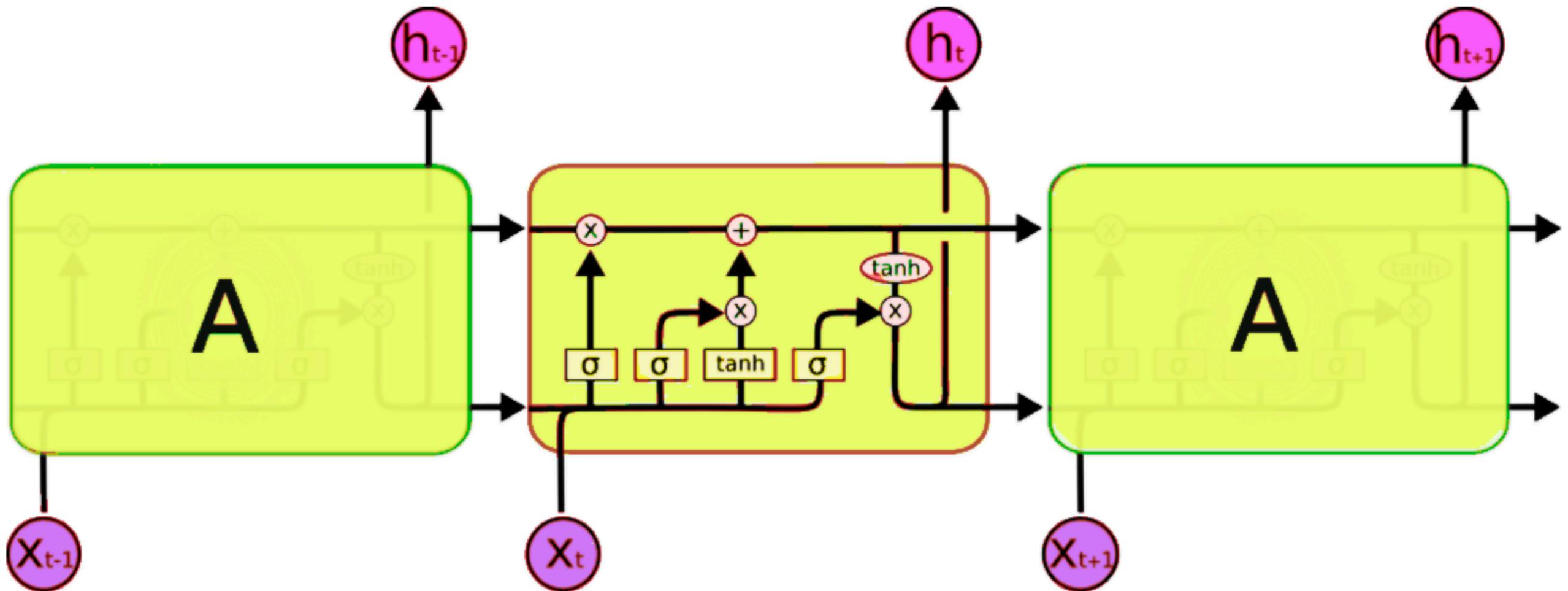


3rd assessment due

# Day-To-Day Differences in Average Clicks

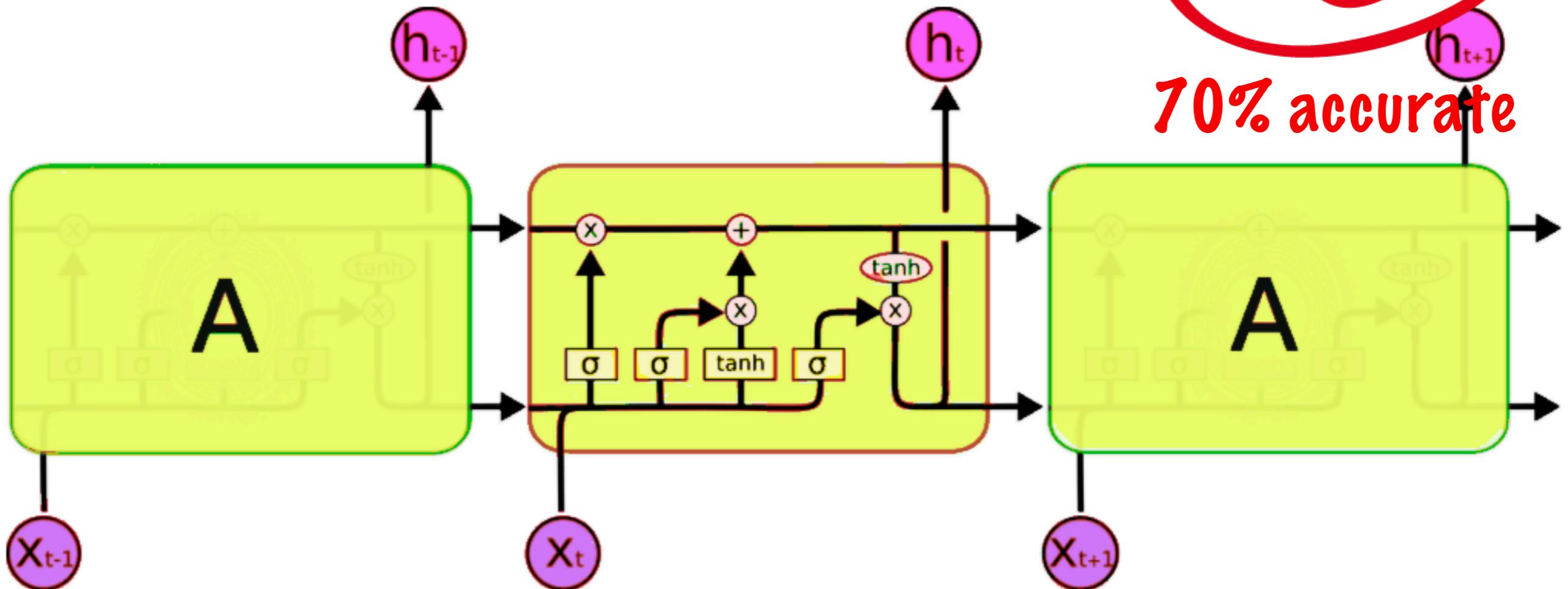


# Long Short-Term Memory Neural Network

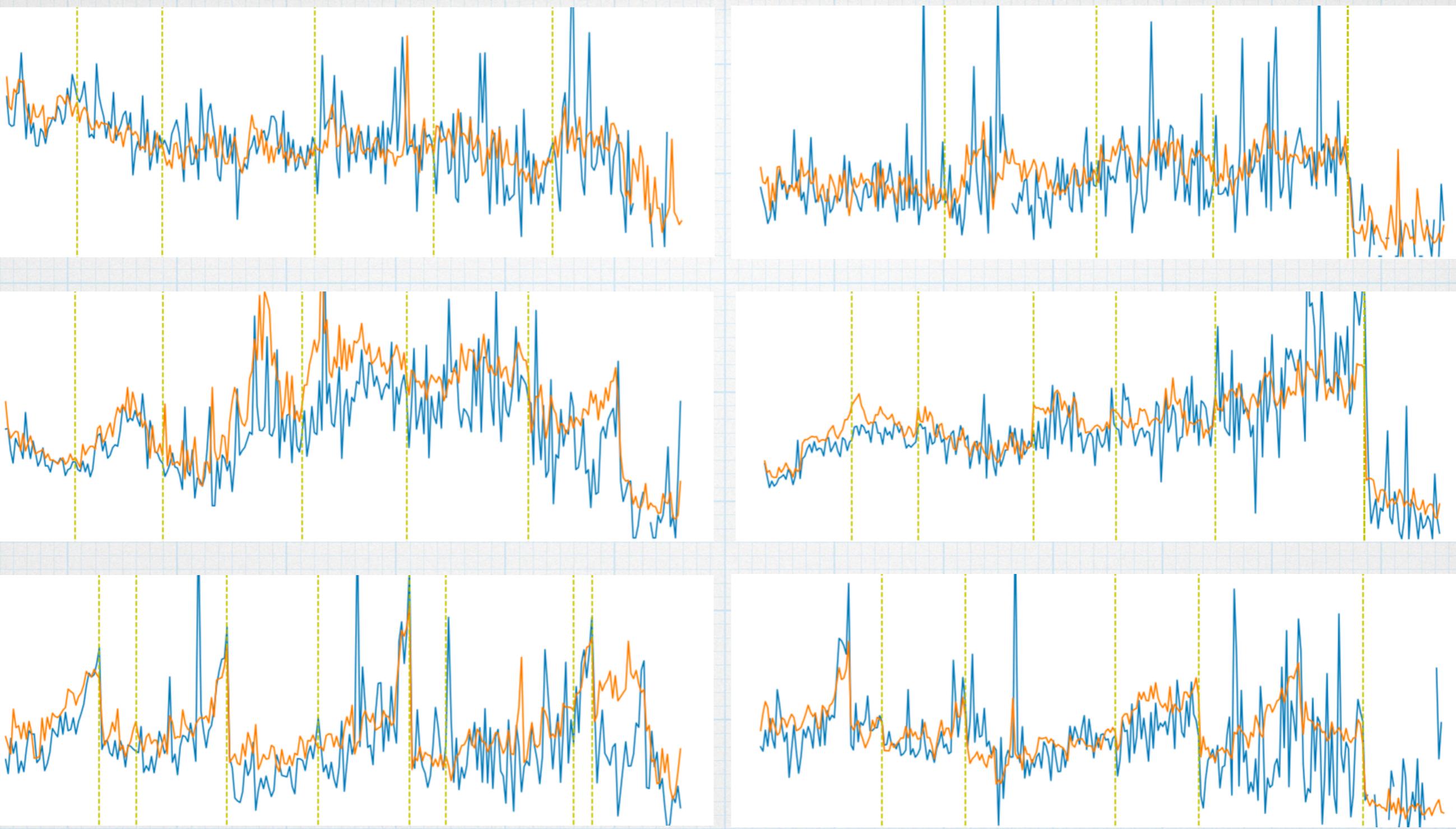


Can “remember” earlier parts of a sequence through additional logic gates

# Long Short-Term Memory Neural Network

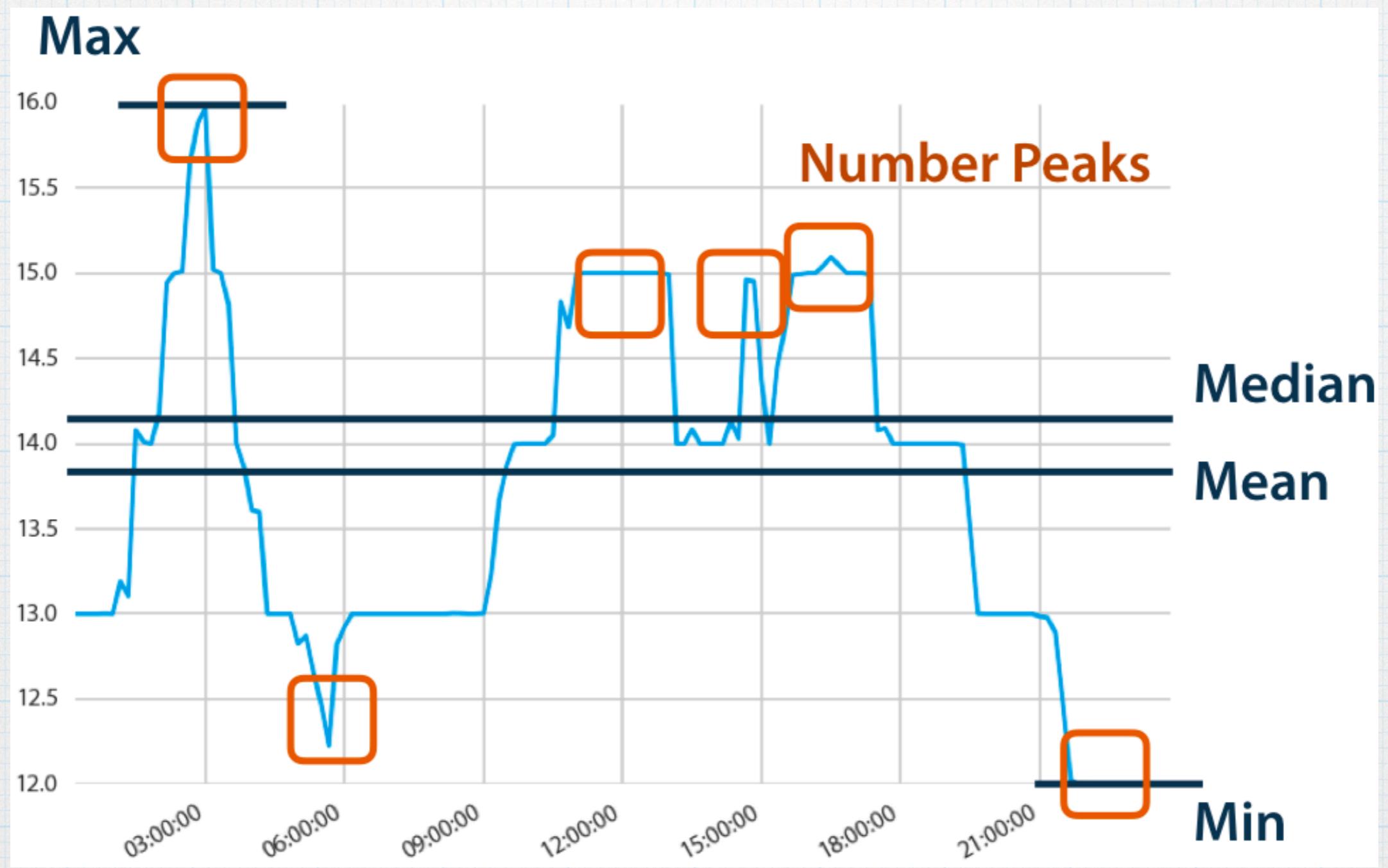


Can “remember” earlier parts of a sequence through additional logic gates



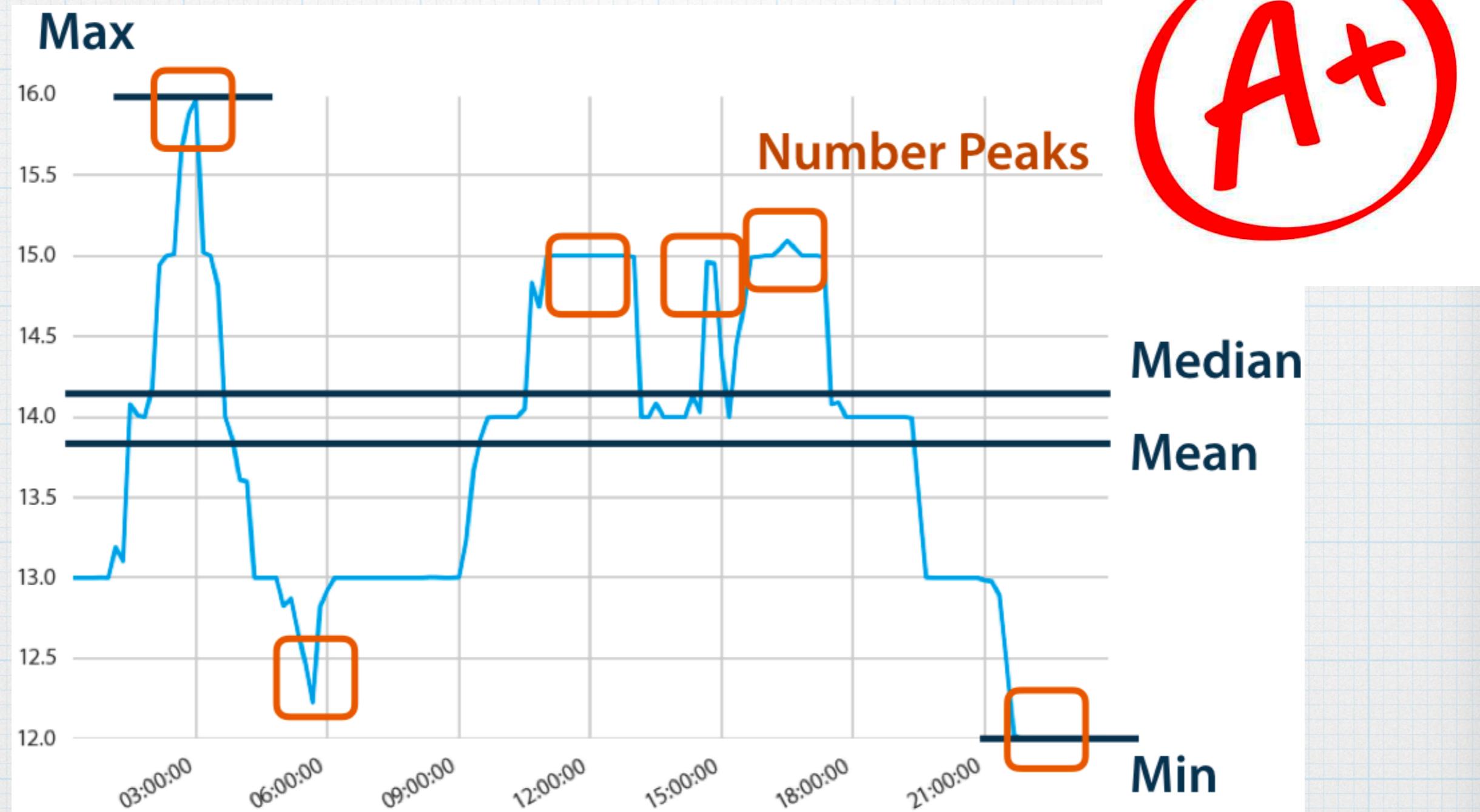
Do they become different before the second assessment?  
Before halfway?

# "TS-FRESH" python package



Automatic Time Series Feature Extraction & Evaluation

successful, but not perfect



- high feature-examples ratio risks curse of dimensionality
- pairwise (feature-target) evaluation misses interactions

If you liked this project, have questions, ideas, concerns,  
or just want to learn more, please reach out me

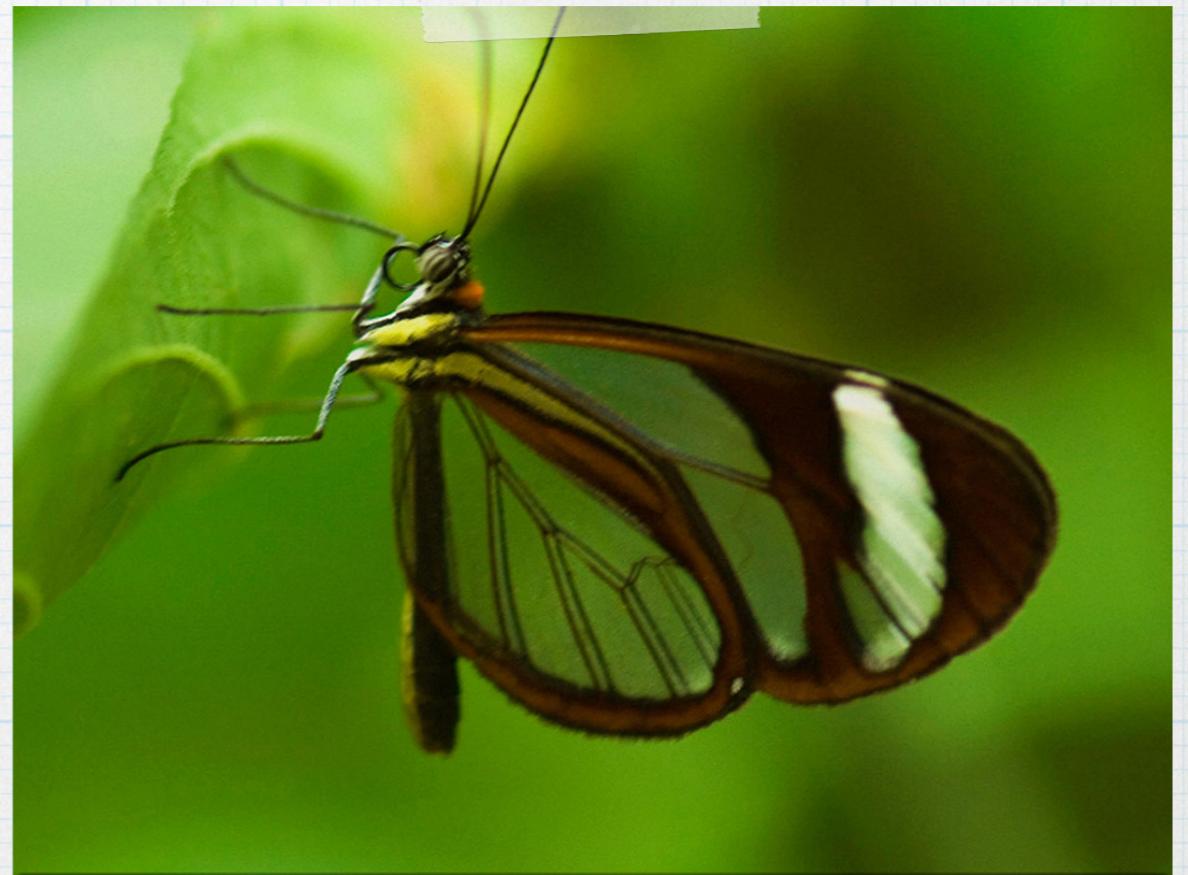
puraluz13@gmail.com



zimzoom



klzim



Thank you Joseph Gartner, Dan Rupp, Brent Goldberg, Kiatra and my fellows  
For your guidance and insight