



# TrendMiner Live Training Sessions

Value-Based Searches – Tips & Tricks





Listen Only  
Mode



Use Question Box!



Recording and  
Handout will be  
provided!

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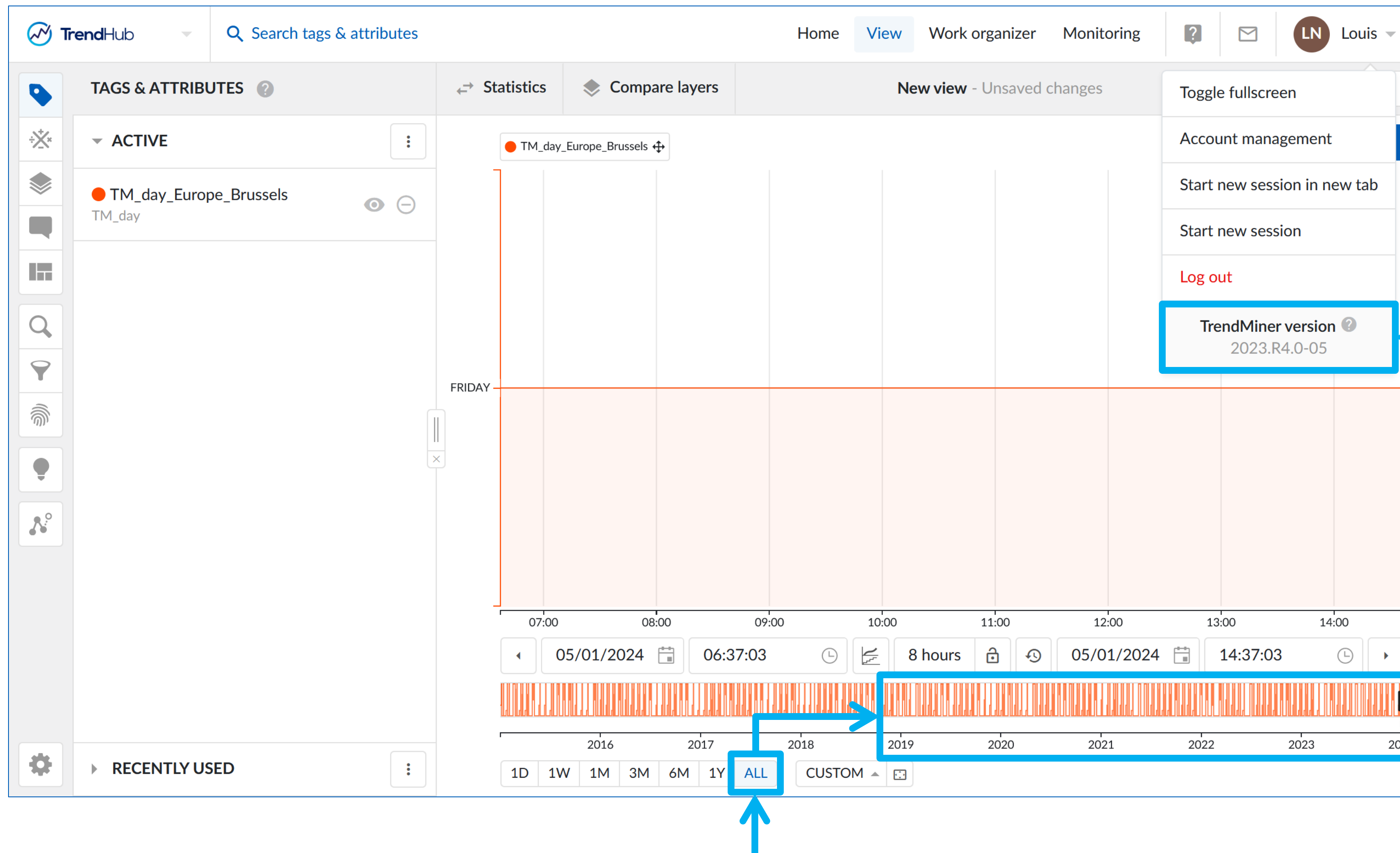
Online training includes exercises.  
You may log in to your own TrendMiner account using Firefox or Chrome if possible.

# GoToWebinar – Question box & handout



The screenshot shows the GoToWebinar interface. The browser address bar displays the URL: `app.gotowebinar.com/index.html#311378419/1205308145121961230/6005855076829420560`. The main content area shows a monitor icon and the text "Waiting to view Liz Davis's screen." On the right, a vertical sidebar contains several icons: a blue asterisk icon at the top, a red microphone icon labeled (a), a green hand icon labeled (b), a question mark icon labeled (c) with a blue arrow pointing to it from a box labeled "Question box", and a document icon labeled (d) with a blue arrow pointing to it from a box labeled "Handout". To the right of the sidebar is a "Questions" panel with a close button (X). It contains a message from "Webinar staff" to everyone: "Q: How long will this webinar be?" and "A: This webinar will be an hour long." with a timestamp of "1:15 PM". At the bottom of the sidebar are icons for a red circle, an information icon (i), and keyboard shortcuts (F2, F3). The word "Exit" is written at the bottom of the sidebar. At the bottom of the "Questions" panel is a "Send" button.

# Do you need a training account?



1 ✓ 2 ✓ You can complete this training with your own account.

1 Version **2023.R1** or newer

2 After clicking on "ALL", your data will be available until at least 01.01.2019

✗ If one of the requirements is not met, ask for an account in the question box.

# INTRODUCTION & TODAY'S GOALS

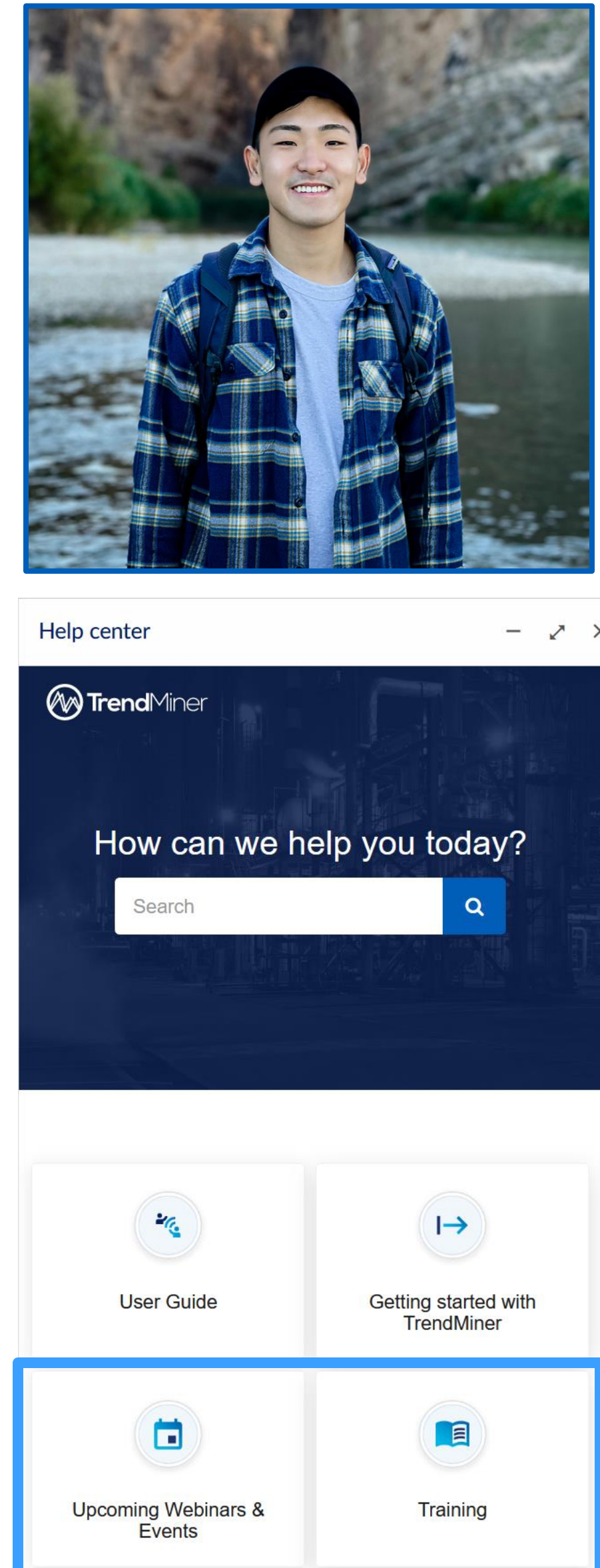




## Kevin Li, Data Analytics Engineer

- Support customers reaching value with self-service analytics
- Tackling more advanced use cases
- Support users in their analytics journey

**POLL** about the users:  
What is your current level of TrendMiner knowledge?





## 1. Background on indexing in TrendMiner

- Impact on searching for short events

## 2. How to find short peaks

- How do we search for peaks shorter than minimum search duration?

## 3. Searching for events with a duration from X to Y hours

- How can you limit the duration with a maximum duration?

## 4. Combine AND & OR conditions for a value-based search

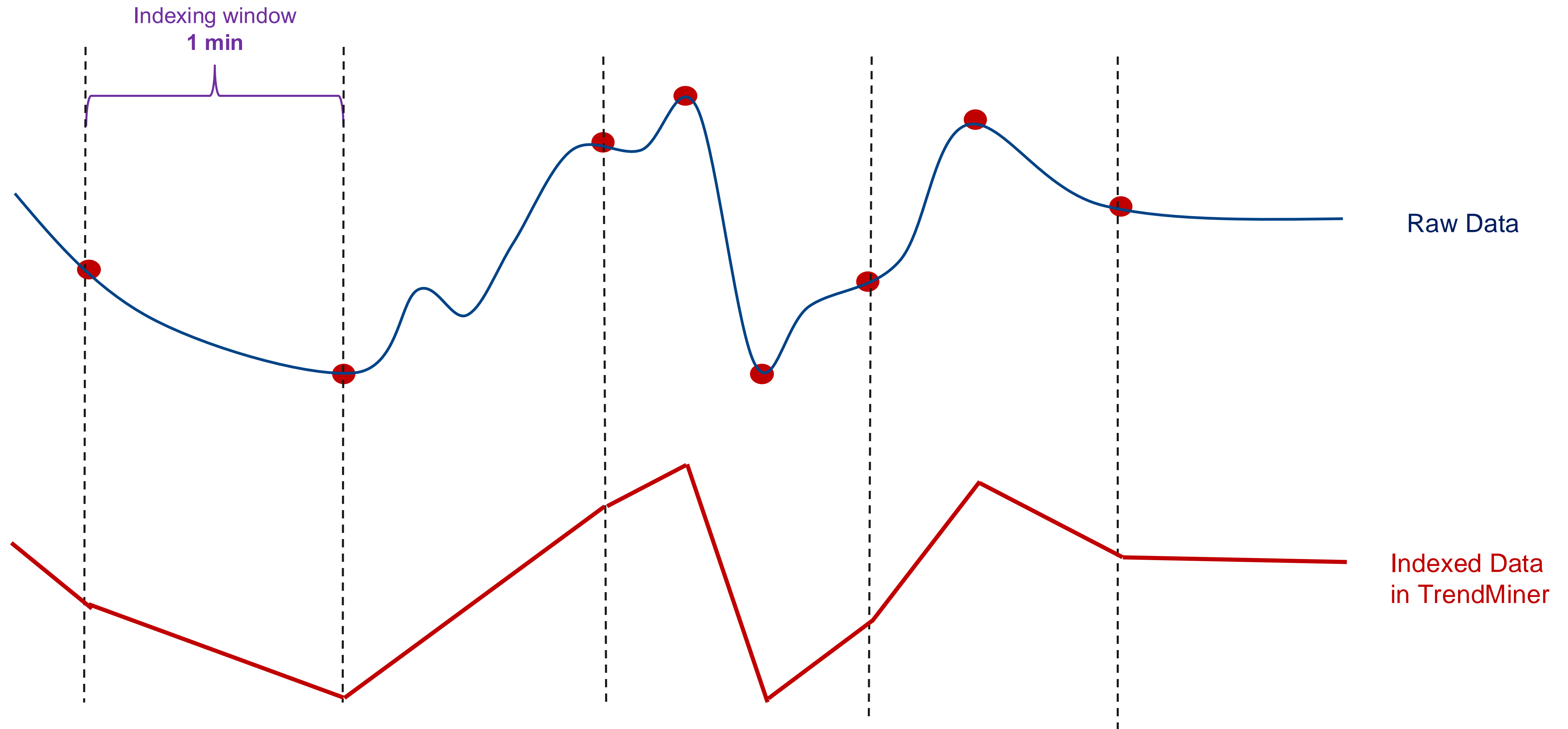
- How to conduct a value-based search that requires us to combine AND & OR statements?

# Background on indexing in TrendMiner





# Explanation - Indexing

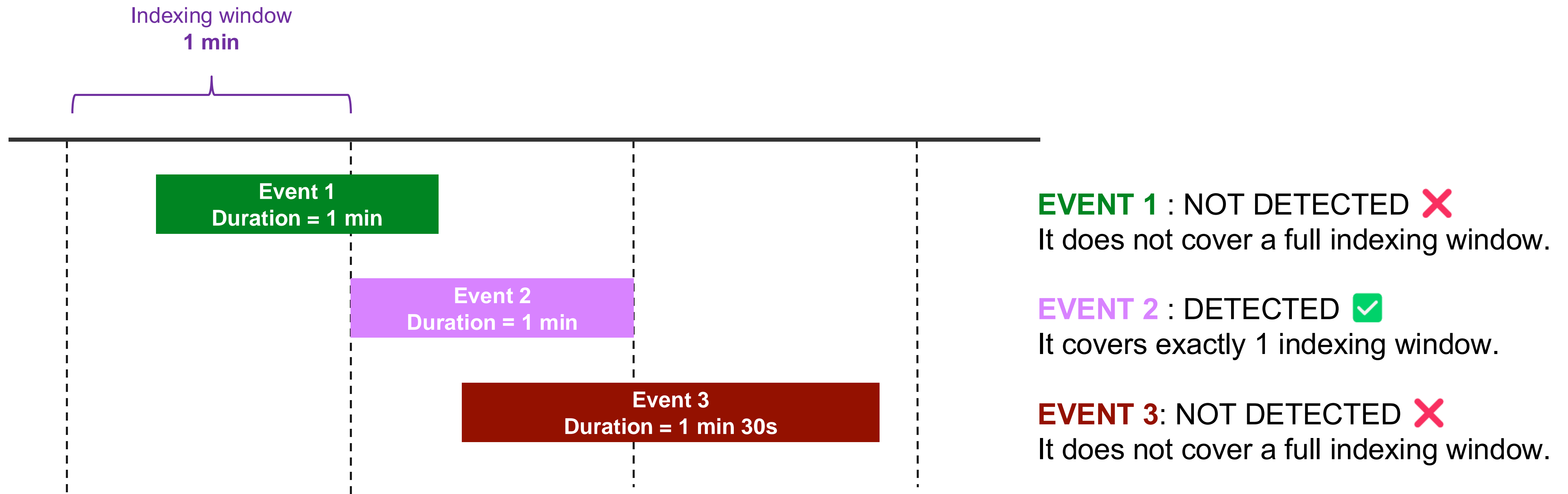


Searches in TrendMiner are performed on indexed data – not on raw data.

# Explanation - Search results duration



The search function finds an event if the duration of the event covers at least one indexing window.



We can guarantee that the search results are complete only for **events longer than 2 minutes**.  
Some shorter events of 1 minute might be detected. But many other events are overlooked.

# Exercise 1 – How to find short peaks – Demo





## Background:

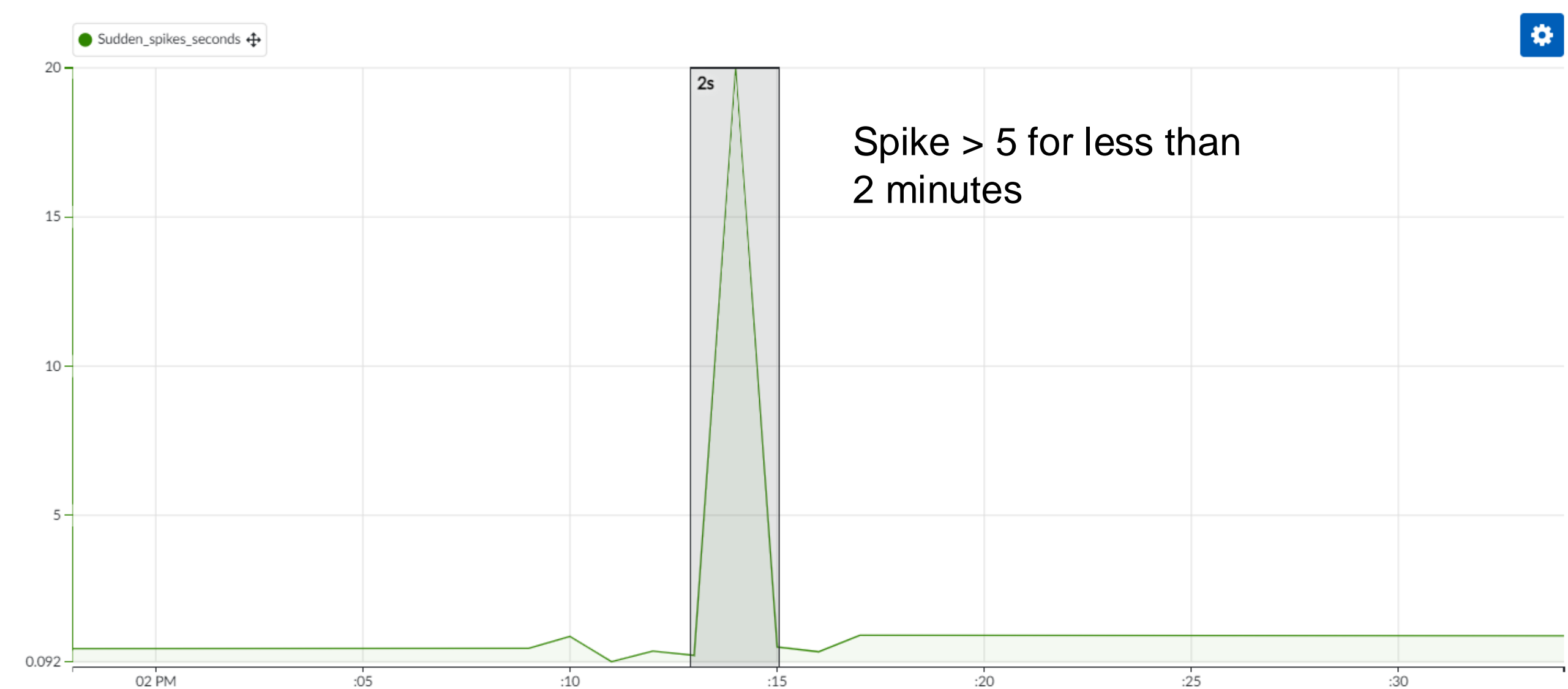
- Short spikes in tag of important process variable
- Duration below minimum search duration (2 min)
- value-based search will not find it

## Goals:

- Determine number of spikes
- Make use of aggregation

## Poll question:

- ❖ Which aggregation is suitable for this case?



# How to find short peaks - Demo



## Pro tip

Use maximum aggregations to find upwards spikes below minimal search duration and minimum aggregation to find downward spikes.

VALUE BASED SEARCH

Exercise 1 search 1  
(Sudden\_spike\_aggregation\_maximum\_central\_2m)

- Sudden\_spike\_aggregation\_maximum\_central\_2m > 5
- At minimum during 2m.

Edit search conditions

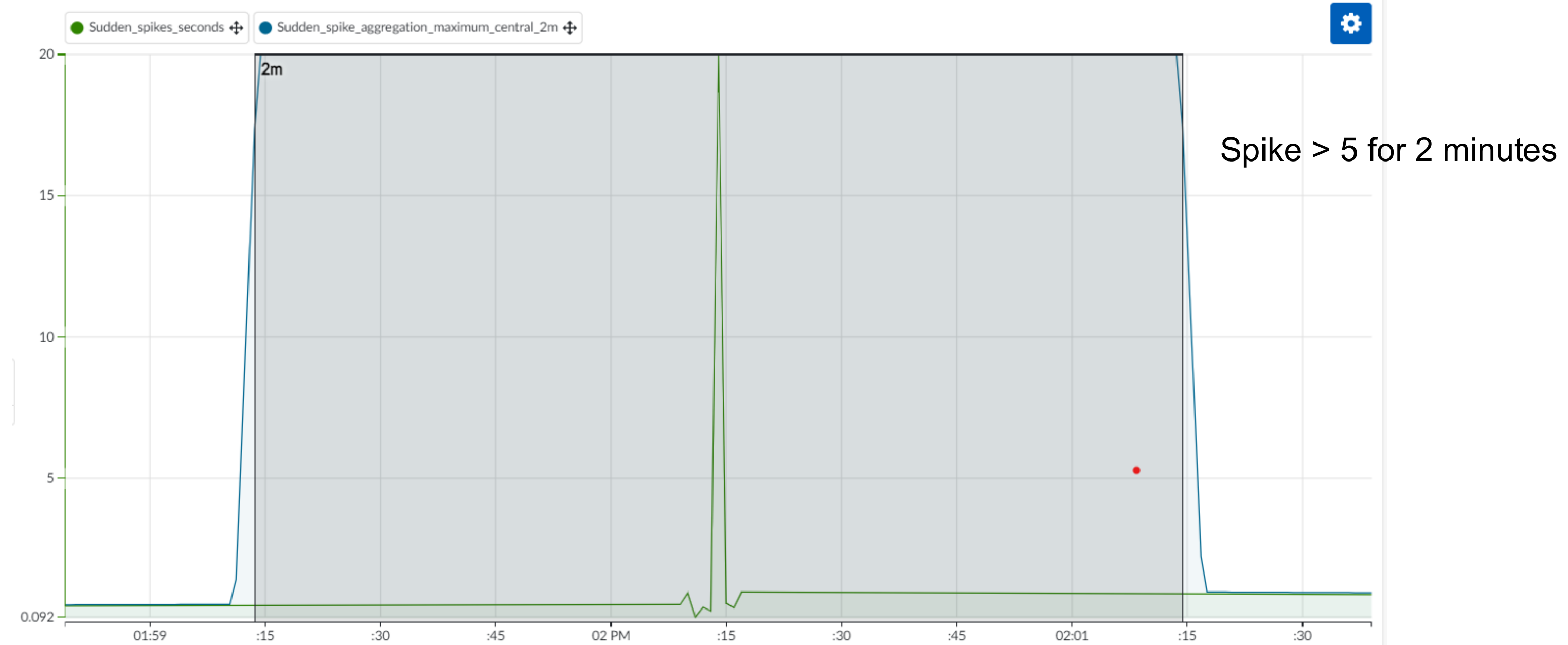
Add calculation

Save this search

Search

RESULTS (6)

11/23/2020 1:00:00 PM 1m	Add layer   Set as base layer
11/2/2020 1:00:00 PM 1m	Add layer   Set as base layer
9/14/2020 2:00:00 PM 1m	Add layer   Set as base layer
8/10/2020 2:00:00 PM 1m	Add layer   Set as base layer
7/4/2020 2:00:00 PM 1m	Add layer   Set as base layer
6/3/2020 2:00:00 PM 1m	Add layer   Set as base layer



Note: The aggregation window should be at least the minimum duration from the value-based search. If spikes are frequently occurring, the number of results can differ from the number of actual spikes.

Exercise 2 – Searching for events with a duration from X to Y hours



# Searching for events with a duration from X to Y hours

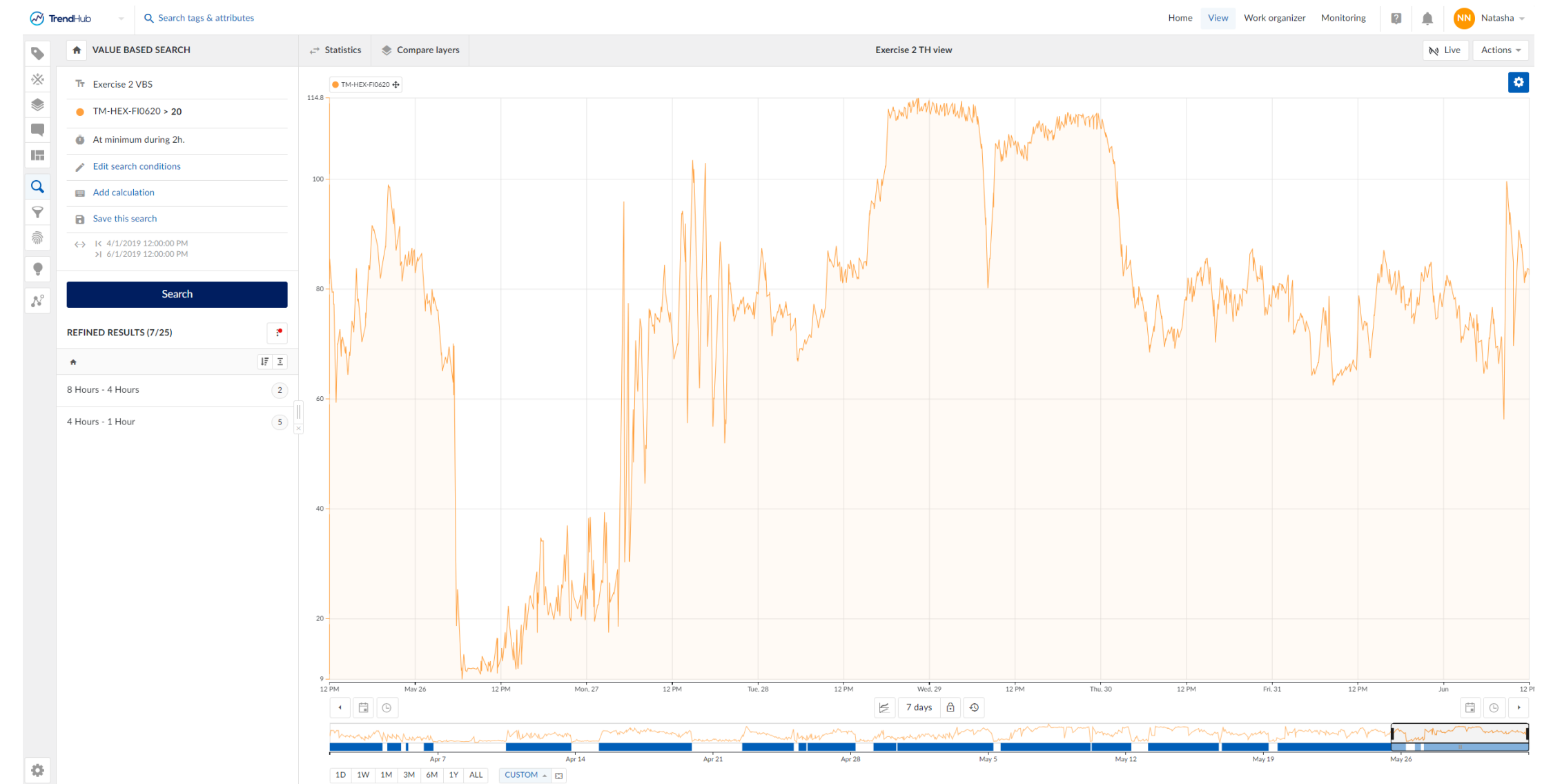


## Background:

- Sometimes, in addition to your search conditions, a specific duration of events is of interest
- TrendMiner searches give you the option to search for events that are longer than a minimum duration
- But how can you also limit the duration with a maximum duration?

## Goals:

- Search for events with a duration of e.g. 2 to 5 hours

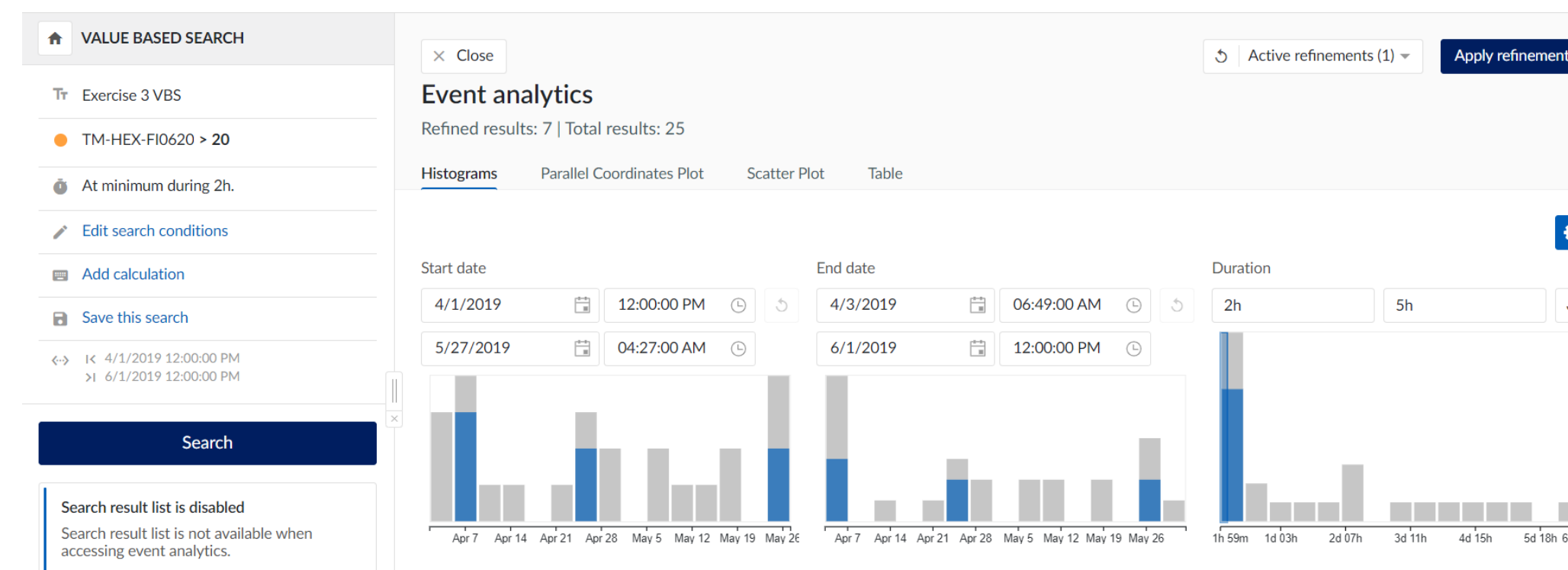


# Searching for events with a duration from X to Y hours



## Steps:

1.	Load tags	TM-HEX-FI0620	
2.	Set custom context bar	4/1/2019   12:00:00 PM – 6/1/2019   12:00:00 PM	
3.	Set focus chart	5/25/2019   12:00:00 PM – 6/1/2019   12:00:00 PM (7 days)	
4.	Start new value based search	TM-HEX-FI0620	> 20
		Min. duration	2 h
5.	Sort results	By duration	
6.	Actions	Event analytics -> Duration 2 h to 5 h -> Apply refinements -> Refined results (7/25)	



The screenshot shows the 'VALUE BASED SEARCH' sidebar. It includes a home icon, the title 'VALUE BASED SEARCH', and a list of search conditions: 'Exercise 3 VBS', 'TM-HEX-FI0620 > 20', and 'At minimum during 2h.'. Below the list are buttons for 'Edit search conditions', 'Add calculation', and 'Save this search'. At the bottom, there is a 'Search' button and a section for 'REFINED RESULTS (7/25)' with a list of months: 'May' (with a count of 2) and 'April' (with a count of 5).



# Exercise 3 – Combine AND & OR conditions for a value-based search



# Combine AND & OR conditions for a value-based search



## Background:

- We have a process in which several products are produced and want to find out when the pressure is higher than a specific value in the products beta and gamma
- Product available as digital tag

## Goals:

- Find  $p > 20$  for a certain minimum duration during production beta or gamma
- Identify all pressures in one search



# Combine AND & OR conditions for a value-based search – Option 1

## Steps:

1.	Load tags	TM-BP2-PRODUCT.1 and TM-BP2-PRESSURE.1	
2.	Set custom context bar	1/1/2019   12:00:00 AM – 2/11/2019   12:00:00 AM	
3.	Set focus chart	2/7/2019   12:00:00 PM – 2/8/2019   12:00:00 PM (1 day)	
4.	Start new value based search	TM-BP2-PRODUCT.1	= BETA, GAMMA
		TM-BP2-PRESSURE.1	> 20
		Min. duration	45 min
5.	Check results list	95 results	

**VALUE BASED SEARCH**

Exercise 4 VBS 1

● TM-BP2-PRODUCT.1 =

AND ● TM-BP2-PRESSURE.1 > 20

🕒 At minimum during 45m.

[Edit search conditions](#)

[Add calculation](#)

[Save this search](#)

🏠 |< 1/1/2019 12:00:00 AM  
 > 2/11/2019 12:00:00 PM

**Search**

**RESULTS (95)**

🏠 |< |>

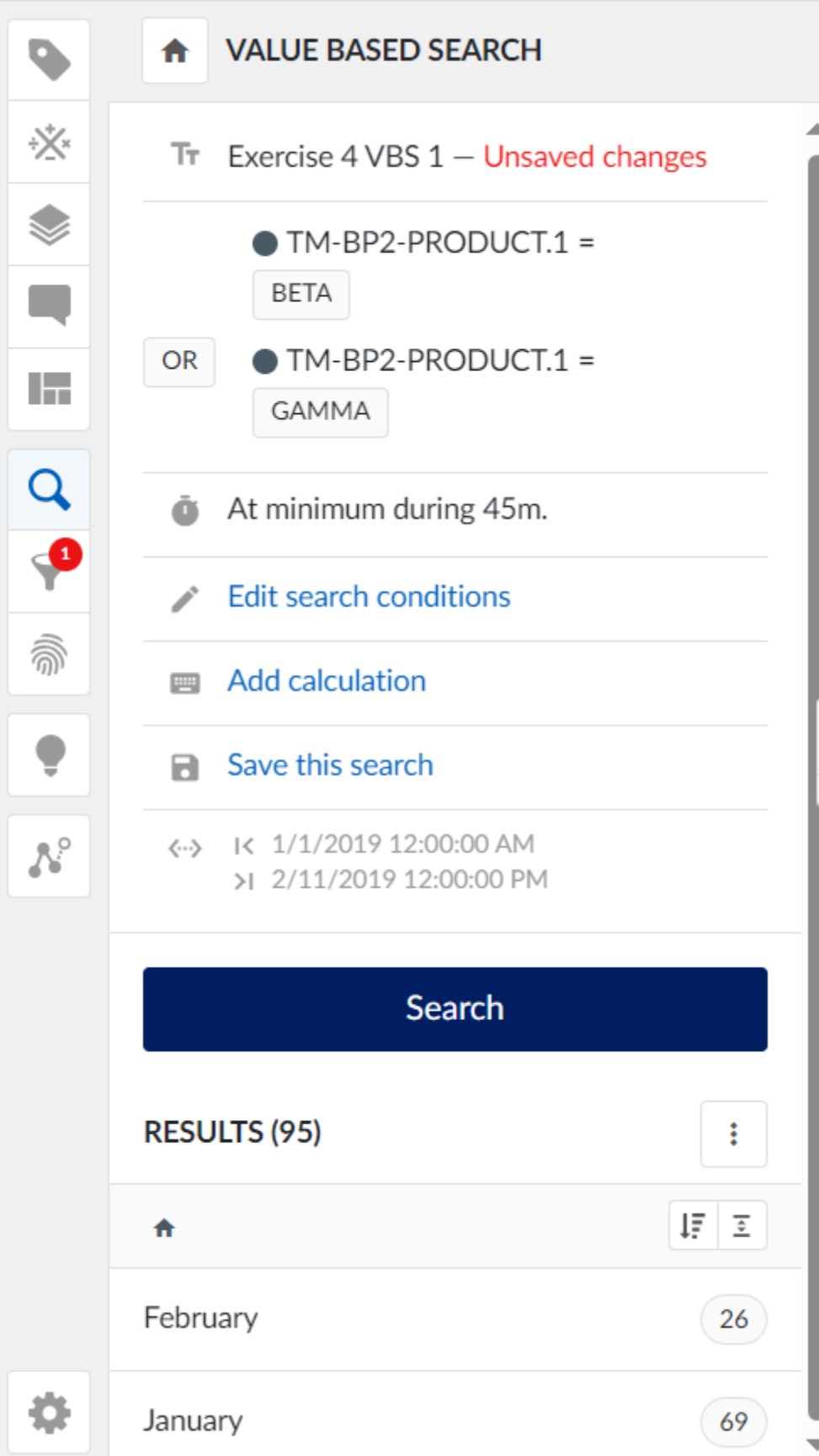
February 26

January 69

# Combine AND & OR conditions for a value-based search – Option 2

## Steps:

1.	Load tags	TM-BP2-PRODUCT.1 and TM-BP2-PRESSURE.1	
2.	Set custom context bar	1/1/2019   12:00:00 AM – 2/11/2019   12:00:00 AM	
3.	Set focus chart	2/7/2019   12:00:00 PM – 2/8/2019   12:00:00 PM (1 day)	
4.	Start new value based search	TM-BP2-PRESSURE.1	> 20
		Min. duration	45 min
5.	Create a filter	Keep results	
6.	Start new value based search	TM-BP2-PRODUCT.1	= BETA <b>OR</b>
		TM-BP2-PRODUCT.1	= GAMMA
		Min. duration	45 min
7.	Check results list	95 results	



The screenshot shows the 'VALUE BASED SEARCH' interface. At the top, it displays 'Exercise 4 VBS 1 – Unsaved changes'. The search conditions are defined as follows:

- TM-BP2-PRODUCT.1 = BETA
- OR
- TM-BP2-PRODUCT.1 = GAMMA

Additional conditions include 'At minimum during 45m.' and 'Min. duration 45 min'. The interface includes buttons for 'Edit search conditions', 'Add calculation', and 'Save this search'. The search results are displayed as 'RESULTS (95)' with a filter icon. The results are grouped by month: February (26 results) and January (69 results).

# Combine AND & OR conditions for a value-based search – Option 3

## Steps:

1.	Load tags	TM-BP2-PRODUCT.1 and TM-BP2-PRESSURE.1	
2.	Set custom context bar	1/1/2019   12:00:00 AM – 2/11/2019   12:00:00 AM	
3.	Set focus chart	2/7/2019   12:00:00 PM – 2/8/2019   12:00:00 PM (1 day)	
4.	Filter menu	Delete unsaved filter	
5.	Create a new formula	if(and(or(product="BETA",product="GAMMA"),p>20),1,0)	
		Map variables	product = TM-BP2-PRODUCT.1
			p = TM-BP2-PRESSURE.1
4.	Start new value based search	Formula	= 1
		Min. duration	45 min
7.	Check results list	95 results	

**FORMULA**

Name  
TM-BP2-PRODUCT.1\_BETA\_GAMMA\_p>20\_formula

Formula  
1 if(and(or(product="BETA", product="GAMMA"),p>20),1,0)

**VARIABLE MAPPING**

- ✓
product

TM-BP2-PRODUCT.1
>
- ✓
p

TM-BP2-PRESSURE.1
>

**VALUE BASED SEARCH**

Exercise 4 VBS 1 – Unsaved changes

● TM-BP2-PRODUCT.1\_BETA\_... 20\_formula = 1

🕒 At minimum during 45m.

[Edit search conditions](#)

[Add calculation](#)

[Save this search](#)

⏪ 1/1/2019 12:00:00 AM  
⏩ 2/11/2019 12:00:00 PM

Search

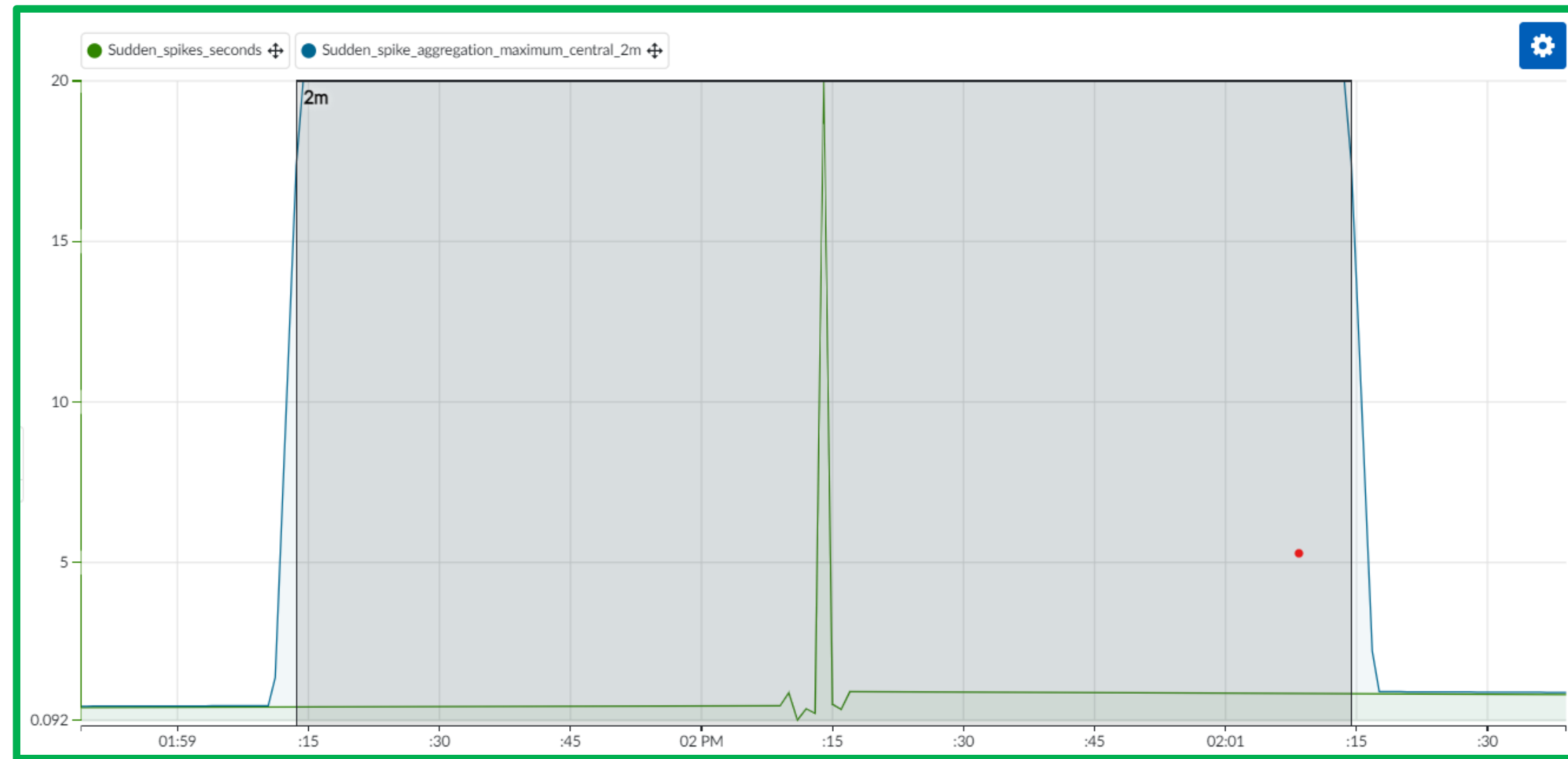
**RESULTS (95)**

February 26

January 69

WRAP-UP





REFINED RESULTS (7/25)	
Home	Filter/Sort
May	2
April	5

RESULTS (95)	
Home	Filter/Sort
February	26
January	69

- Find peaks shorter than the index resolution
- Search for a duration from X hours to Y hours
- Combine AND & OR statement


# Do you want to learn more?

Intermediate Guides & Live Training Webinars

Here you can find the **Intermediate Guides**:

User Guide / Training / Intermediate Guides

## Intermediate Guides



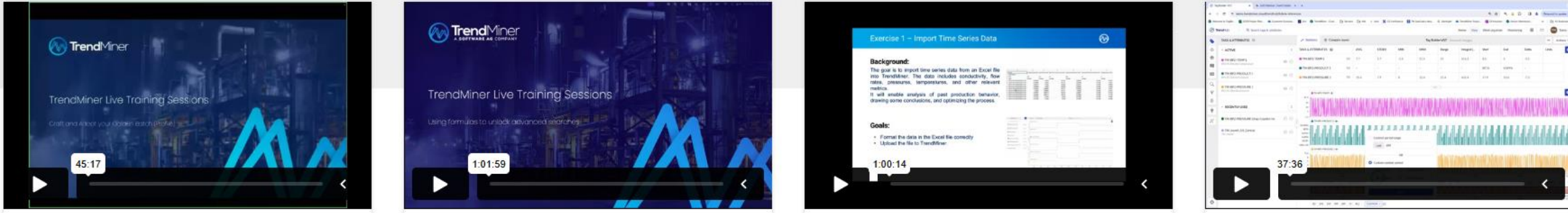

**In this section**

- Get your process statistics (Int)
- Detect, warn & contextualize anomalies and process events (Int)
- Create your actionable dashboard (Int)
- Trouble shooting (Int)
- Create your own KPIs and Variables (Int)

<https://userguide.trendminer.com/en/intermediate-guides.html>

Here you can find all **Live Training Webinars** from the past years:

## Live trainings - English (2020-2024)



**Craft And Adopt Your Goals**

**Using formulas to unlock ...**

**Data Importing - Everything...**

**Is Tag Builder only for ex...**

<https://vimeo.com/showcase/8476721>



Create your account now: <https://community.trendminer.com/>



The screenshot shows the TrendMiner Community website. At the top, there is a navigation bar with the TrendMiner logo, a dropdown menu for 'Community', and links for 'News', 'Events', 'Groups', 'User Guide', and 'Admin Docs'. A '+ CREATE NEW TOPIC' button is visible next to a user profile picture. Below the navigation is a large blue banner with the text 'Welcome to the TrendMiner Community!' and a search bar containing the placeholder text 'Search your answer in the Community and User Guide'. Underneath the banner, there is a section titled 'Pick your role to find relevant content' with three role-based cards: 'TrendMiner User' (with an image of a person at a laptop), 'Admin / IT' (with an image of a woman at a laptop), and 'Project Manager / Coach' (with an image of a man in a suit). Below this is a 'Discover and Learn' section with six category cards: 'Ask The Community' (with a question mark icon), 'User Guide' (with a document icon), 'Admin Docs' (with a document icon), 'Events' (with a microphone icon), 'Use Cases' (with a hand icon), and 'Success Best Practices' (with a trophy icon). Each card includes a brief description of the category.

Search your answers in the community, User Guide, and Admin Docs.

Ask your questions or inspire other people by sharing your TrendMiner experiences

Check out role-specific landing pages and find relevant topics easily

Discover diverse categories



QUESTIONS?

