



# Progressive Sports Performance Through Big Data



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29.10.2016



# Hannu Rytönen

Lead developer, Suunto  
Specialized in data visualization and UI

Hobbies: triathlon, skateboarding, dancing

# Suunto

Founded in 1936

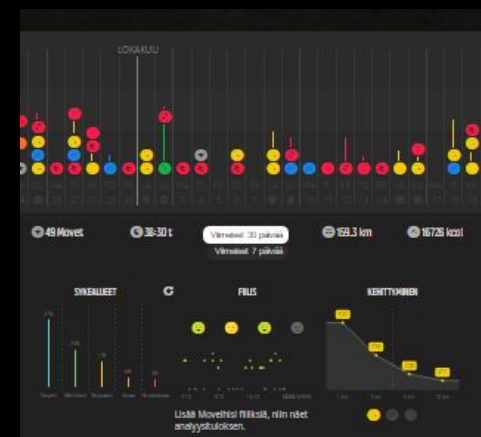
## Products

- Sport watches
- Dive computers
- Movescount.com
- Compasses

Subsidiary of Amer Sports

Employees 300 - 400

Located in Vantaa, Finland



# Movescount.com - an online training community

First version published in 2010

Platform for managing moves recorded by Suunto watches

Over 1.5 million registered users

Over 125 million moves

About 70 000 - 150 000 new moves per day

# Metrics & Records

Part of the Suunto Next Generation feature set

## Analysed sports

Running

Trail running

Cycling

Mountain biking

Open water swimming

Pool swimming

Triathlon

Totally over billion metrics

# Looking for answers to the following questions

Am I progressing?

How good I am?

How to train?

Am I progressing?



# How is this done?

All individual moves are analysed and key metrics gathered

Example move: Running 22.5 km

Fastest 1km, 1mile, 2km, 3km, 2miles, 5km, 10km, 15km and 21km searched



# Result (1/2)

Fastest 10km from every running move from January to October



## Result (2/2)

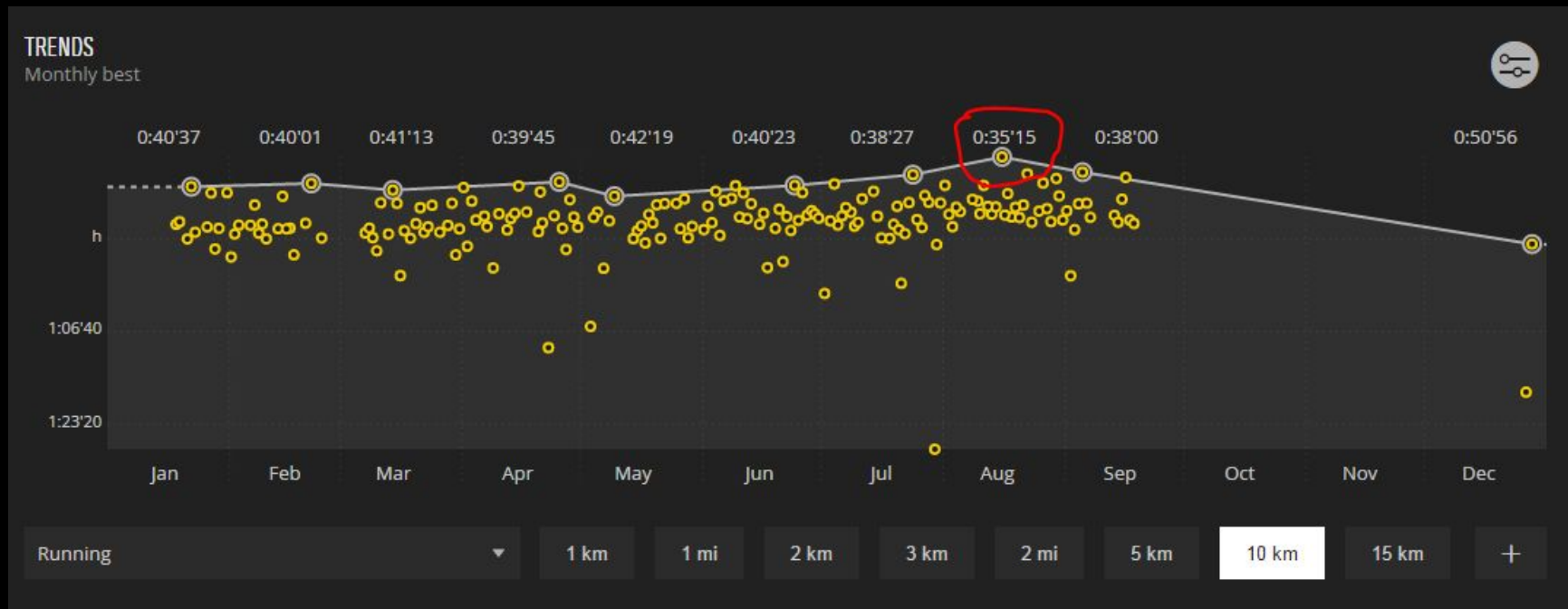
Fastest 10km from every running move from January to October, which are run between the heart rate of 130 - 180 bpm.


























How good I am?

# How is this done?

Users' personal bests are identified from each metric. Fastest 10km run, highest power for 1h in cycling, the fastest 1500m swim, etc.



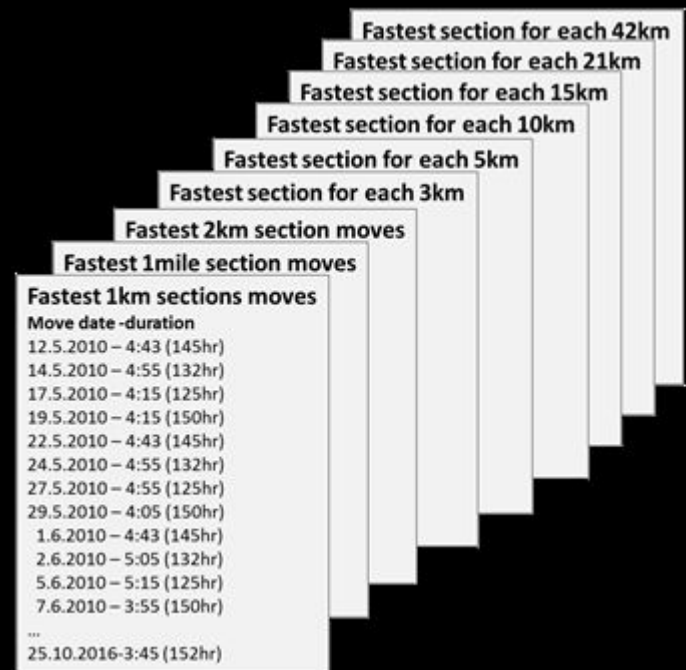
# Result

 RUNNING	 You	 Age group	To reach next level		
1 km	 0:02'56	0:04'33	You're in the top 20 %	Top 10 % - 0:02'50	
1 mi	 0:04'58	0:07'40	You're in the top 20 %	Top 10 % - 0:04'55	
2 km	 0:06'13	0:09'45	You're in the top 10 %	No data for next level	
3 km	 0:09'32	0:15'04	You're in the top 10 %	No data for next level	
2 mi	 0:10'13	0:16'16	You're in the top 10 %	Top 5 % - 0:09'41	
5 km	 0:16'56	0:26'11	You're in the top 10 %	Top 5 % - 0:15'58	
10 km	 0:35'15	0:54'38	You're in the top 10 %	Top 5 % - 0:34'31	
15 km	 0:56'28	1:26'47	You're in the top 10 %	Top 5 % - 0:54'26	
1/2 Marathon	 1:18'55	2:05'22	You're in the top 10 %	Top 5 % - 1:17'03	
Marathon	 2:40'37	4:41'55	You're in the top 5 %	No data for next level	

# How to train?

# How is this done?

over 1.5 million members  
over 125 million moves  
over 1 billion metrics





# Search for results

## Community Training Insights

Suunto Movescount allows you to compare your own performance to people in your age group, training towards a similar goal. Get valuable insights to plan your own training and find tips how to improve.



Running



Marathon



3:30'00




Include finish times 3:25'00 - 3:30'00

# Results (1/4)

## RUNNING - MARATHON - SUB 3:30'00 HOURS

PEOPLE WHO ACHIEVED THIS GOAL TRAINED LIKE THIS

Running

 2.5 x week

Duration

 2:56 / week


Distance

 31.42 km / week


Average distance

 12.61 km


Total Moves

 3.5 x week

Total training hours

 5:42 / week

Average age

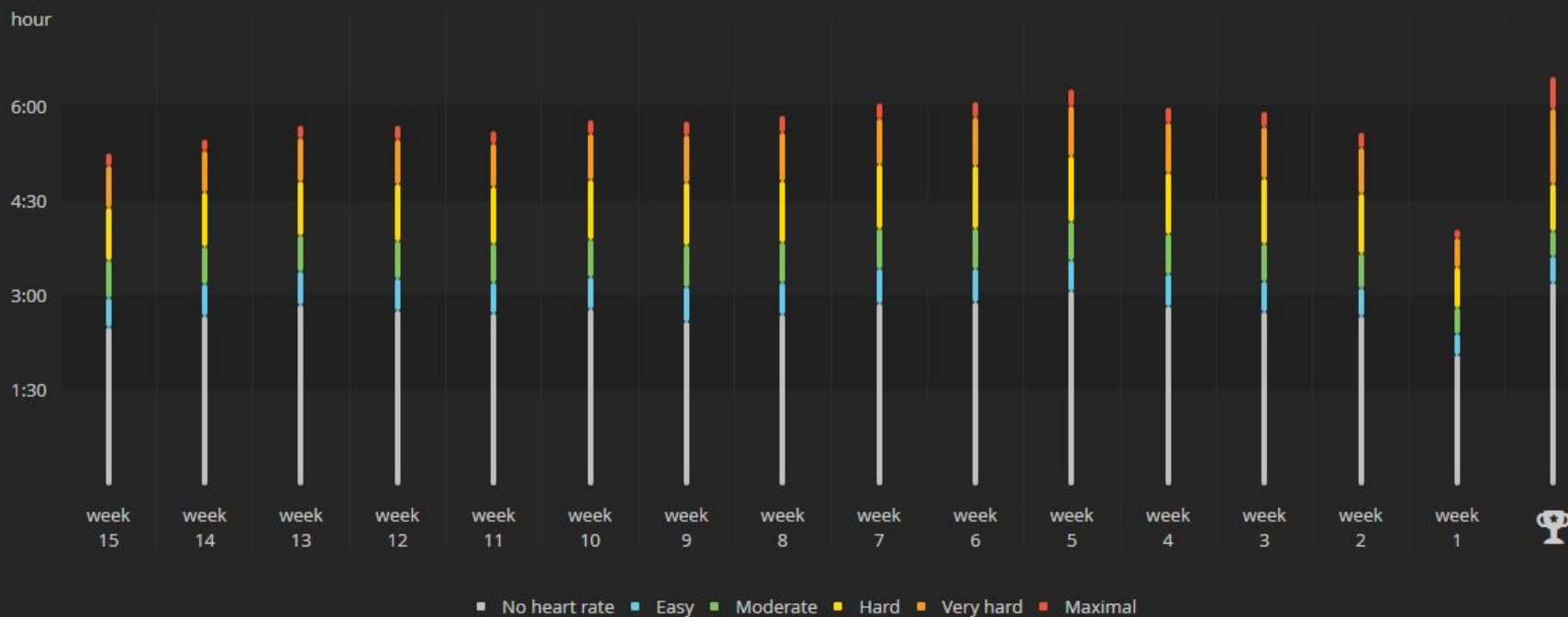
 40 years

Average weight

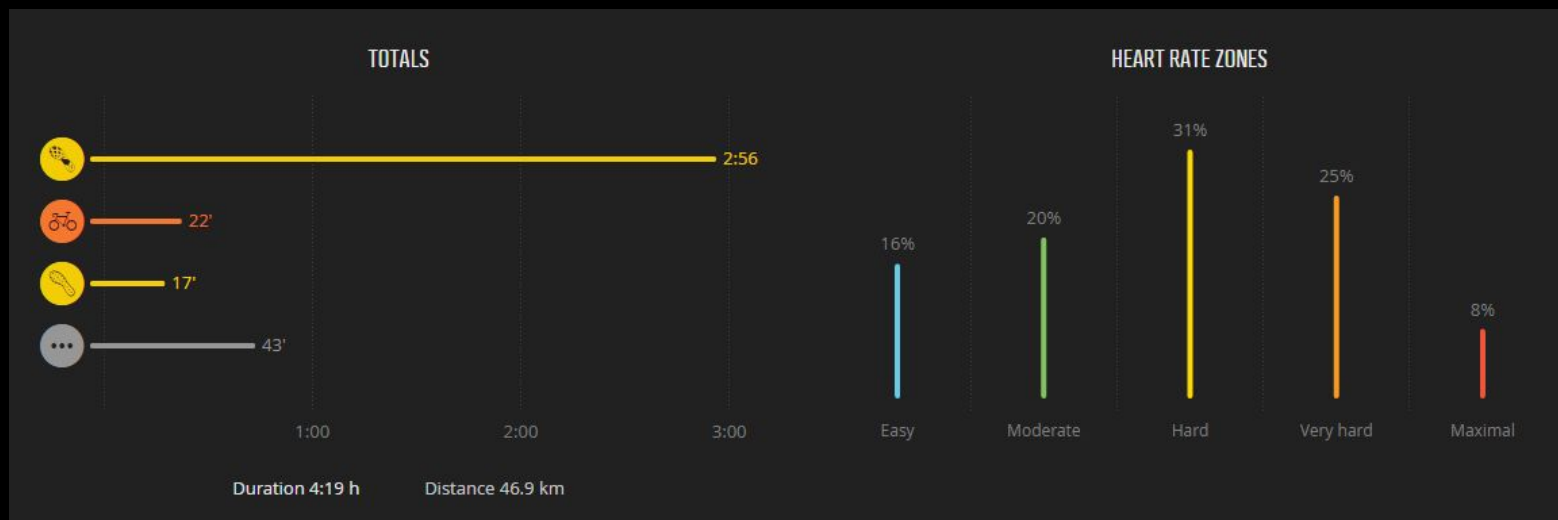
 72 kg

# Results (2/4)

TRAINING AT DIFFERENT HEART RATE ZONES



# Results (3/4)



# Results (4/4)



## RUNNING



Comparison group

1 km	0:03'18
1 mi	0:05'38
2 km	0:07'11
3 km	0:11'16
2 mi	0:12'12
5 km	0:19'38
10 km	0:41'54
15 km	1:05'39
1/2 Marathon	1:34'19
Marathon	3:27'21

## Some technical facts

- Data visualization library: D3.js
- Database: HP Vertica
- Infrastructure: Amazon Web Services

# Questions?



Thank you.



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