TimeSearcher

visualizing and querying time
Why?
Why?

1. Visualize

2. Query

3. Interpret
TimeSearcher v1

- Developed between 2000 and 2001
- Conceptual approach
- Several interesting time query widgets
Demo
TimeSearcher v2
TimeSearcher v2

Introduction of a SearchBox to specify query parameters
TimeSearcher v2

Introduction of a SearchBox to specify query parameters

- v1:
  timebox used to filter data and run queries
TimeSearcher v2

Introduction of a SearchBox to specify query parameters

• v1:
  timebox used to filter data and run queries

• v2:
TimeSearcher v2

Introduction of a SearchBox to specify query parameters

• v1: timebox used to filter data and run queries

• v2:
  • timebox used to limit scope
TimeSearcher v2

Introduction of a SearchBox to specify query parameters

• v1:
  timebox used to filter data and run queries

• v2:
  • timebox used to limit scope
  • searchbox used to perform a specific pattern search
Interface
Interface
3-step interactive search
3-step interactive search

• *Reduce* the *scope* with a timebox
3-step interactive search

• **Reduce** the *scope* with a timebox

• **Specify** a *pattern* with a searchbox
3-step interactive search

- **Reduce** the *scope* with a timebox

- **Specify** a *pattern* with a searchbox

- **Refine** the query’s *precision* (slider)
Search Algorithm:
2 modes
Search Algorithm:

2 modes

Euclidian Distance:

average of differences
Search Algorithm:

2 modes

Envelope:
boundary values
Search Algorithm:
4 modifiers
Search Algorithm:
4 modifiers

Linear trend removal:
*absolute value of the slopes taken*
Search Algorithm:
4 modifiers

Amplitude scaling: divided by the variance
Search Algorithm:
4 modifiers

Offset translation
the mean is substracted
Search Algorithm:
4 modifiers

Noise removal: values averaged
Demo
Limitations
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- No statistic to search the results
Limitations

- No statistic to search the results
- No multiple, simultaneous pattern searching
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- No user-defined simple patterns
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- Limited to small datasets
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- No statistic to search the results
- No multiple, simultaneous pattern searching
- No user-defined simple patterns
- Limited to small datasets
- Slow response time and frequent crashes
interpretation
interpretation

Stock prices?

Business Q
interpretation

Stock prices?

Business Q

TimeSearcher Q
interpretation

Stock prices?

Business Q

TimeSearcher Q

TimeSearcher A
interpretation

$\$ ?

Stock prices?

Business Q

TimeSearcher Q

Business A

TimeSearcher A