

# Algorithmen & Datenstrukturen

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*Fachbereich Informatik*

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- some bullets
- some math  $\sqrt{n} \ln(n) + \frac{1}{2} \sum_{x \in \mathbb{N}} f(x)$

- 1 test
- 2 test2 Haaallloo

```
public class Text {  
    public static void main(String[] args) {  
        System.out.println("Hallo");  
    }  
}
```

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**Welche Definitionen für „Algorithmus“ gaben die Videos?**

## Why study algorithms?

Their impact is broad and far-reaching.

**Internet.** Web search, packet routing, distributed file sharing, ...

**Biology.** Human genome project, protein folding, ...

**Computers.** Circuit layout, file system, compilers, ...

**Computer graphics.** Movies, video games, virtual reality, ...

**Security.** Cell phones, e-commerce, voting machines, ...

**Multimedia.** MP3, JPG, DivX, HDTV, face recognition, ...

**Social networks.** Recommendations, news feeds, advertisements, ...

**Physics.** N-body simulation, particle collision simulation, ...

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Google  
YAHOO!  
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### Mysterious algorithm was 4% of trading activity last week

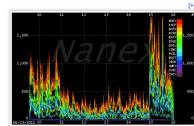
October 11, 2012

A single mysterious computer program that placed orders — and then subsequently canceled them — made up 4 percent of all quote traffic in the U.S. stock market last week, according to the top tracker of [high-frequency trading](#) activity.

The motive of the algorithm is still unclear, [CNBC](#) reports.

The program placed orders in 25-millisecond bursts involving about 500 stocks, according to Nanex, a market data firm. The algorithm never executed a single trade, and it abruptly ended at about 10:30 a.m. ET Friday.

"My guess is that the algo was testing the market, as high-frequency frequently does," says Jon Najarian, co-founder of TradeMonster.com. "As soon as they add bandwidth, the HFT crowd sees how quickly they can top out to create latency." ([Read More: Unclear What Caused Kraft Spike: Nanex Founder.](#))



Genexis high frequency trading chart (credit: Nanex)

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## Why study algorithms?

### Old roots, new opportunities.

- Study of algorithms dates at least to Euclid.
- Formalized by Church and Turing in 1930s.
- Some important algorithms were discovered by undergraduates in a course like this!



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