



Universal Algorithm for Online Trading Based on the Method of Calibration

Vladimir V'yugin, Vladimir Trunov

(Submitted on 16 May 2012 (v1), last revised 3 Oct 2012 (this version, v2))

We present a universal algorithm for online trading in Stock Market which performs asymptotically at least as good as any stationary trading strategy that computes the investment at each step using a fixed function of the side information that belongs to a given RKHS (Reproducing Kernel Hilbert Space). Using a universal kernel, we extend this result for any continuous stationary strategy. In this learning process, a trader rationally chooses his gambles using predictions made by a randomized well-calibrated algorithm. Our strategy is based on Dawid's notion of calibration with more general checking rules and on some modification of Kakade and Foster's randomized rounding algorithm for computing the well-calibrated forecasts. We combine the method of randomized calibration with Vovk's method of defensive forecasting in RKHS. Unlike the statistical theory, no stochastic assumptions are made about the stock prices. Our empirical results on historical markets provide strong evidence that this type of technical trading can "beat the market" if transaction costs are ignored.

Comments: 30 pages. arXiv admin note: substantial text overlap with [arXiv:1105.4272](#)

Subjects: **Learning (cs.LG)**; Portfolio Management (q-fin.PM)

Cite as: [arXiv:1205.3767 \[cs.LG\]](#)
(or [arXiv:1205.3767v2 \[cs.LG\]](#) for this version)

Submission history

From: Vladimir Vyugin [[view email](#)]

[v1] Wed, 16 May 2012 19:17:03 GMT (14kb)

[v2] Wed, 3 Oct 2012 09:00:25 GMT (115kb,D)

[Which authors of this paper are endorsers?](#)

Link back to: [arXiv](#), [form interface](#), [contact](#).

Download:

- [PDF](#)
- [Other formats](#)

Current browse context:

cs.LG

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1205](#)

Change to browse by:

cs

q-fin

q-fin.PM

References & Citations

- [NASA ADS](#)

DBLP - CS Bibliography

[listing](#) | [bibtex](#)

Vladimir V. V'yugin

Vladimir Trunov

Bookmark (what is this?)

