

ALGORITHMS. EVOLVED.

ABEL NOSER ALGORITHMIC EXECUTION SUITE POWERED BY BESTEX RESEARCH

OPTIMIZE EVERY ASPECT OF TRADING

Based on groundbreaking research and methodologies, Abel Noser algorithms provide fundamentally improved performance by optimizing every execution decision.

Abel Noser LLC, a unique agency-only broker-dealer, uses industry-leading analytics to drive execution results and portfolio performance.

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REIMAGINED TRADING ALGORITHMS

A Synergistic Partnership

Abel Noser and BestEx Research, an independent, algorithmic trading company founded by industry trading veteran Hitesh Mittal, have teamed up to offer an end-to-end algorithmic equity trading solution combining sophisticated execution algorithms, real-time TCA, a monitoring dashboard, and a powerful back-testing platform.

Reducing Market Impact

Our ground-breaking methodology is designed to limit the factors that lead to trade slippage and sub-optimal execution. We utilize iterative measurement and a systematic, quantitative approach to define optimal timing, pricing, sizing, and routing for each decision to limit spread cost, market impact, and adverse selection - providing clients with superior, consistent execution outcomes. We can also fully customize and back-test algos based on your specific portfolio needs and characteristics.

ELO Ranking - A Truly Game-Changing Advancement

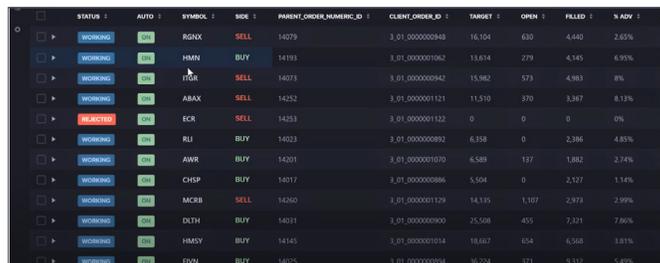
Competition to receive marketable order flow is fierce. Orders at one exchange can easily be 'queue-jumped' by orders posted on other exchanges. This can leave passive orders with a lower fill rate, force your execution algorithms to cross the spread, and affect orders at the back of the queue with higher adverse selection once they do get filled.

Our partners at BestEx have done ground-breaking research and developed a revolutionary methodology to turn the problem of queue-jumping on its head. Employing ELO rankings (often used to rank chess players and online video gamers) on each of the 65,000 possible routing combinations, we select venues that maximize the chances of getting beneficial limit order fills and avoiding the likelihood of a negative outcome resulting from queue-jumping. The result is quantifiably superior execution results.

Full Transparency Via Our Dashboard

Our web-accessed dashboard provides:

- Pre-trade analysis based on strategy selection
- Fully transparent monitoring of trade details
- Real-time visibility of all trading decisions and routes
- Real-time TCA with venue performance indicators



STATUS	AUTO	SYMBOL	SIDE	PARENT_ORDER_NUMERIC_ID	CLIENT_ORDER_ID	TARGET	OPEN	FILLED	% ADV
WORKING	ON	RGNX	SELL	14079	3_01_000000948	16,104	630	4,440	2.65%
WORKING	ON	HMN	BUY	14193	3_01_0000007862	13,814	279	4,145	6.99%
WORKING	ON	ITGR	SELL	14073	3_01_000000942	15,982	573	4,983	8%
WORKING	ON	ABAX	SELL	14252	3_01_0000001121	11,510	370	3,367	8.13%
REJECTED	ON	ECR	SELL	14253	3_01_0000001122	0	0	0	0%
WORKING	ON	RII	BUY	14023	3_01_000000882	6,358	0	2,386	4.85%
WORKING	ON	AWR	BUY	14201	3_01_0000001070	6,589	137	1,882	2.74%
WORKING	ON	CHSP	BUY	14017	3_01_000000886	5,504	0	2,127	1.14%
WORKING	ON	MCRB	SELL	14260	3_01_0000007129	14,135	1,107	2,973	2.99%
WORKING	ON	DLTH	BUY	14031	3_01_000000900	25,508	455	7,121	7.86%
WORKING	ON	HMSY	BUY	14145	3_01_0000009104	18,667	654	6,568	1.81%
WORKING	ON	FVNL	BUY	14005	3_01_000000804	36,224	371	9,112	5.80%

Abel Noser algorithms provide fundamentally improved execution performance by optimizing every aspect of the execution decision tree.

OPTIMIZE EVERY ASPECT

Abel Noser algorithms optimize each component of execution:

Timing - Adapts trading behavior to liquidity of each individual stock by looking at stocks in 'volume time' (NOT 'clock time'), thereby reducing signaling footprint.

Pricing - Fair value modeling, which utilizes a proprietary short-term alpha model, allows for optimal pricing to maximize passive fills and minimize adverse selection.

Sizing - Proprietary queue-size analysis allows for optimization of number, size, and position of orders placed in order book.

Venue - Utilizing proprietary ELO rankings to analyze each of the 65,000+ potential routing combinations, child orders are routed to the venue with the highest probability of receiving the next market order. This maximizes the chances of getting beneficial limit order fills and avoiding the likelihood of a negative outcome resulting from queue-jumping.

Signature Algorithm Trading Suite

- **VWAP** - Seeks to minimize the deviation vs. the VWAP benchmark by executing according to the stock-specific predicted volume pattern.
- **TWAP** - Executes order in equal amounts during each time bucket throughout trading period.
- **Participate** - Executes order at desired percentage of total volume traded in stock.
- **Optimal** - Executes based on the optimal balance between market impact and opportunity cost to minimize slippage versus arrival price.
- **Dark** - Accesses dark and hidden liquidity in an optimal manner to avoid information leakage. Aggressiveness level determines both the venues accessed and the amount of spread willing to cross to capture liquidity.
- **SOR** - Smart order routing to intelligently access the marketplace.

As always, Abel Noser offers careful pre-trade analysis, adaptive execution strategies, real-time transparency of ongoing trades and comprehensive post trade analysis. Instead of using TCA as just an arbiter of costs using purely statistical analysis, our empirically based \$16T universe of trade data is utterly unique and informs all that we do.

Turning Trading Insight Into Action