Adaptive Multi-Agent Active Portfolio Management (applied to Crypto Market Making)

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Подбор выигрышных стратегий на бирже

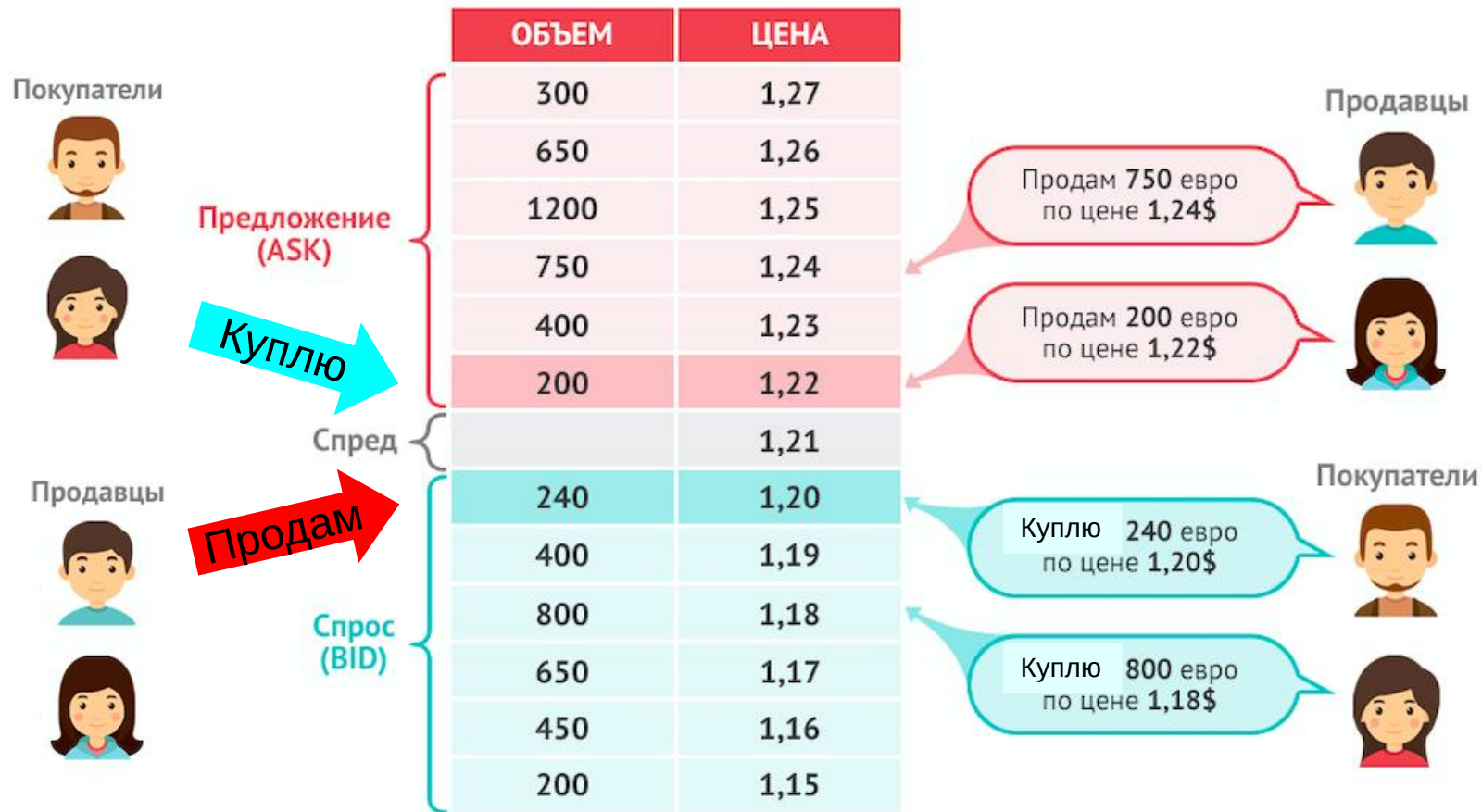Проигрышная стратегия

Проигрышная стратегия

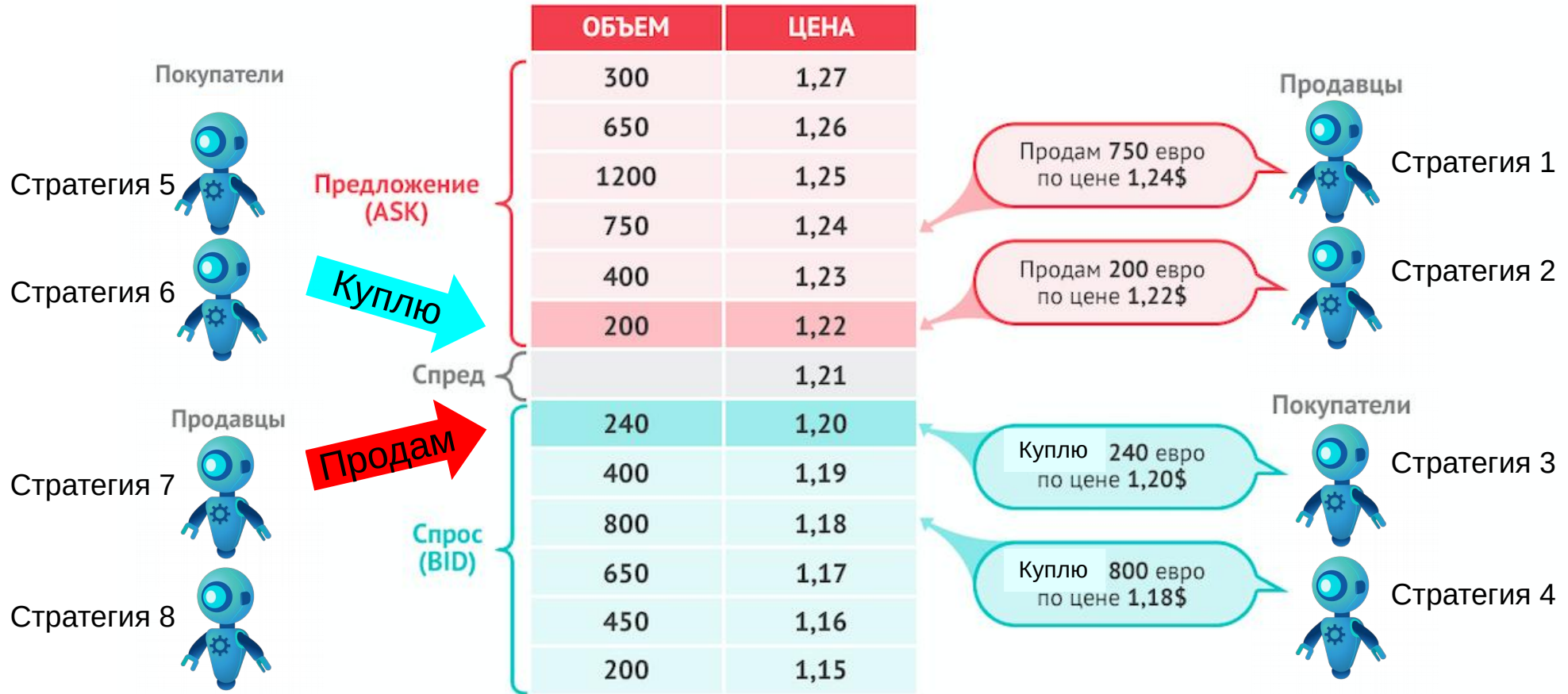Проигрышная стратегия

Выигрышная стратегия

Как подобрать выигрышную стратегию на финансовом (валютном) рынке, в ущерб остальным участникам ("zero sum game")?

Реальная работа биржевых торгов

Мульти-агентная симуляция биржевых торгов

Симуляция торгов на истории ("backtesting")
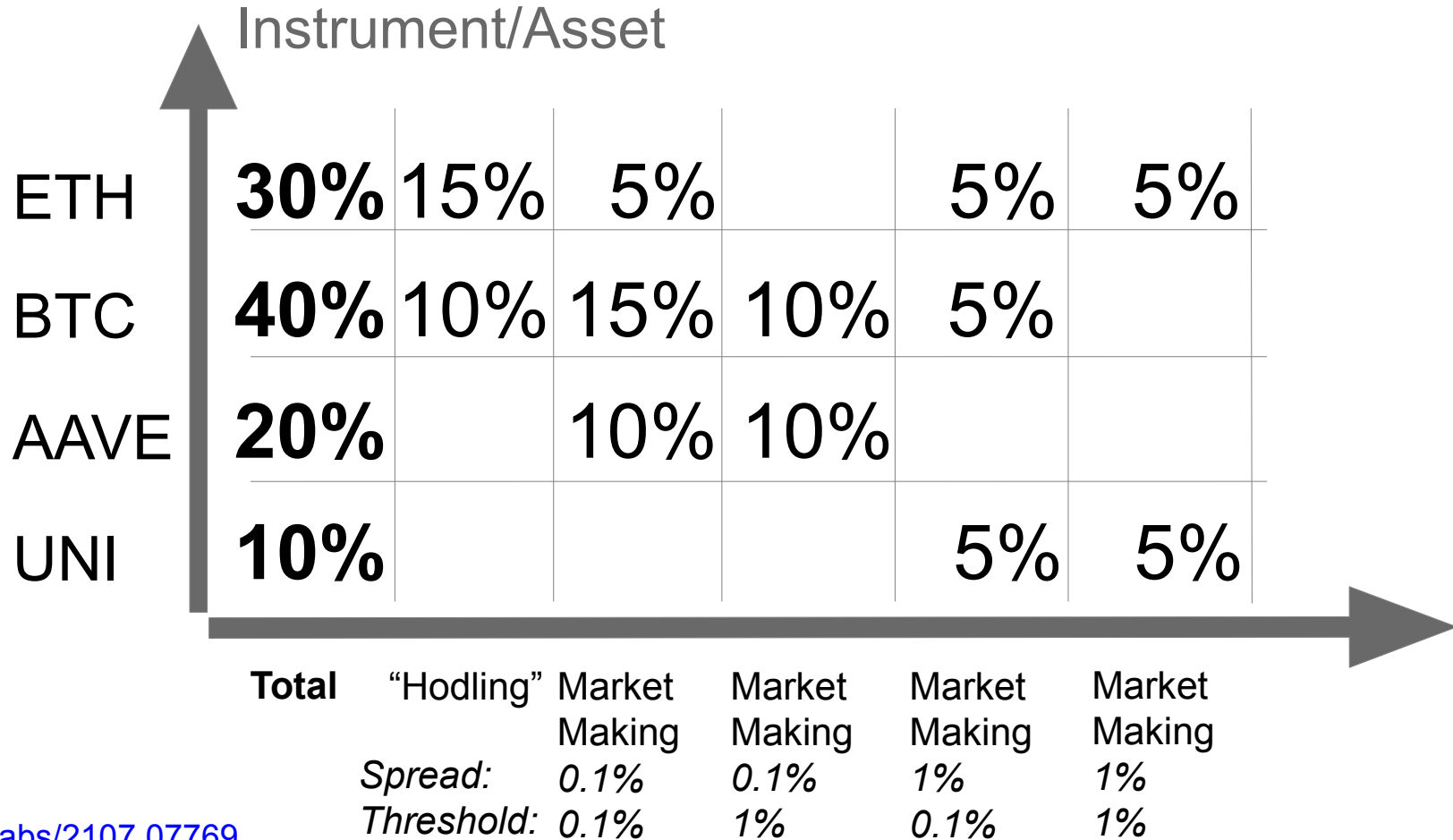
Optimization Space for Active Portfolio Management

Instrument/Asset

	Total	"Hodling"	Market Making	Market Making	Market Making	Market Making
ETH	**30%**	15%	5%		5%	5%
BTC	**40%**	10%	15%	10%	5%	
AAVE	**20%**		10%	10%		
UNI	**10%**				5%	5%
Spread:		0.1%	0.1%	1%	1%	
Threshold:		0.1%	1%	0.1%	1%	

https://arxiv.org/abs/2107.07769
https://ieeexplore.ieee.org/document/9686345

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Narrow AGI for Market Making Agent
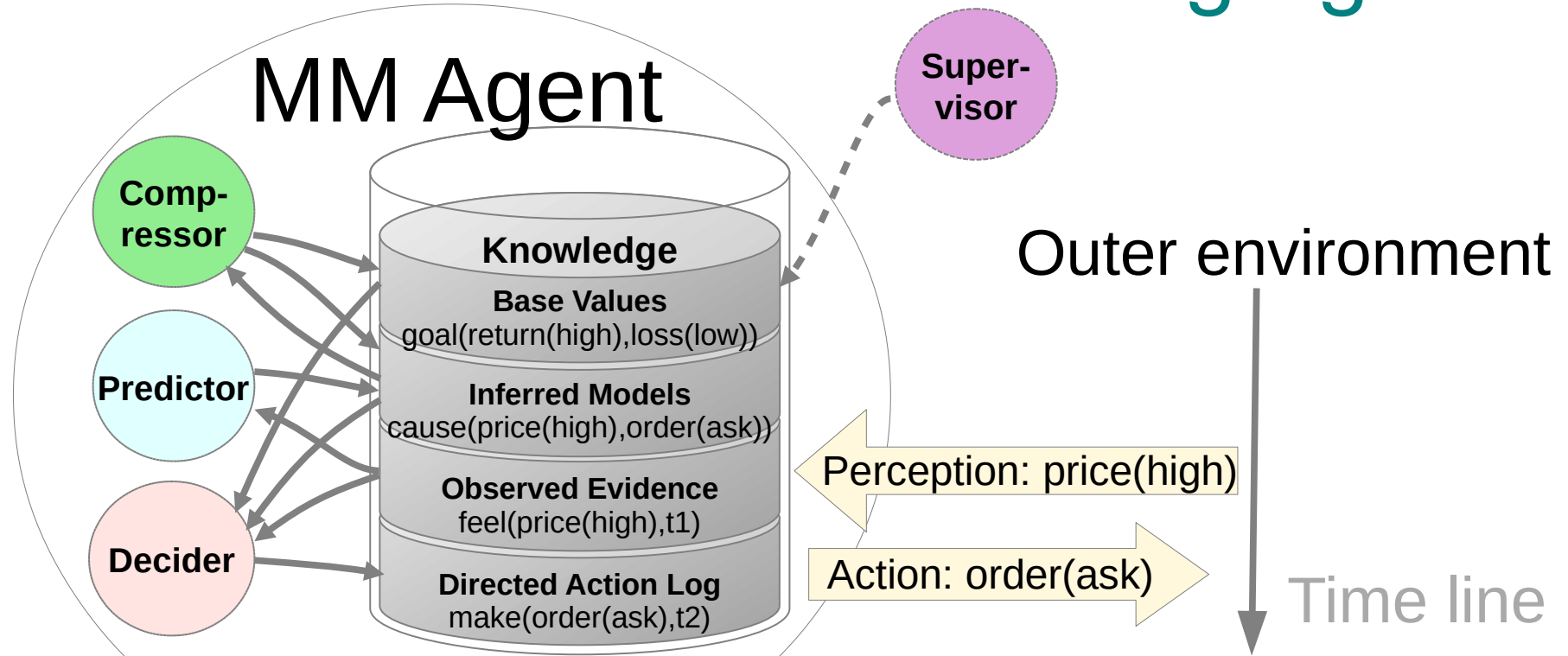
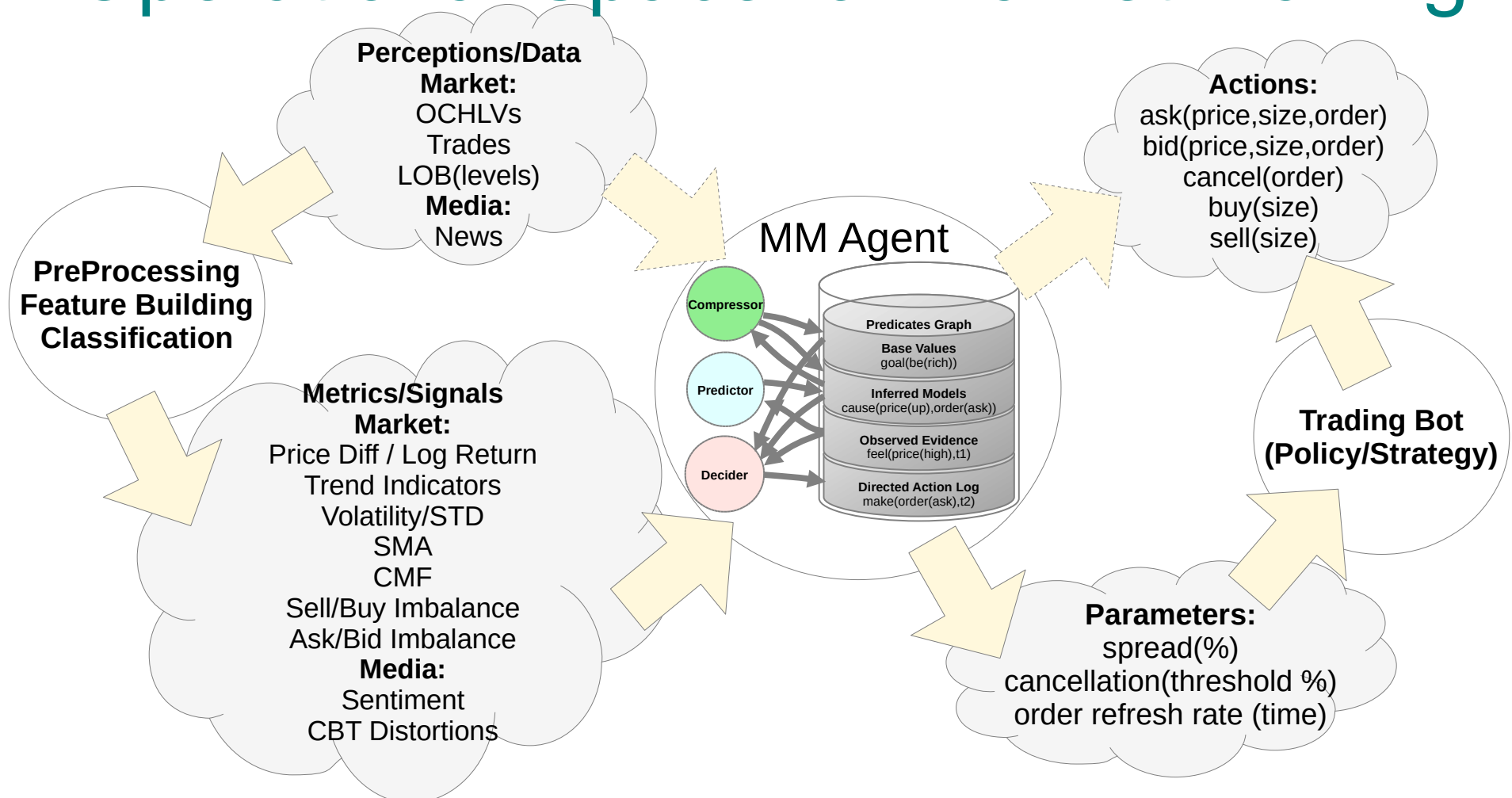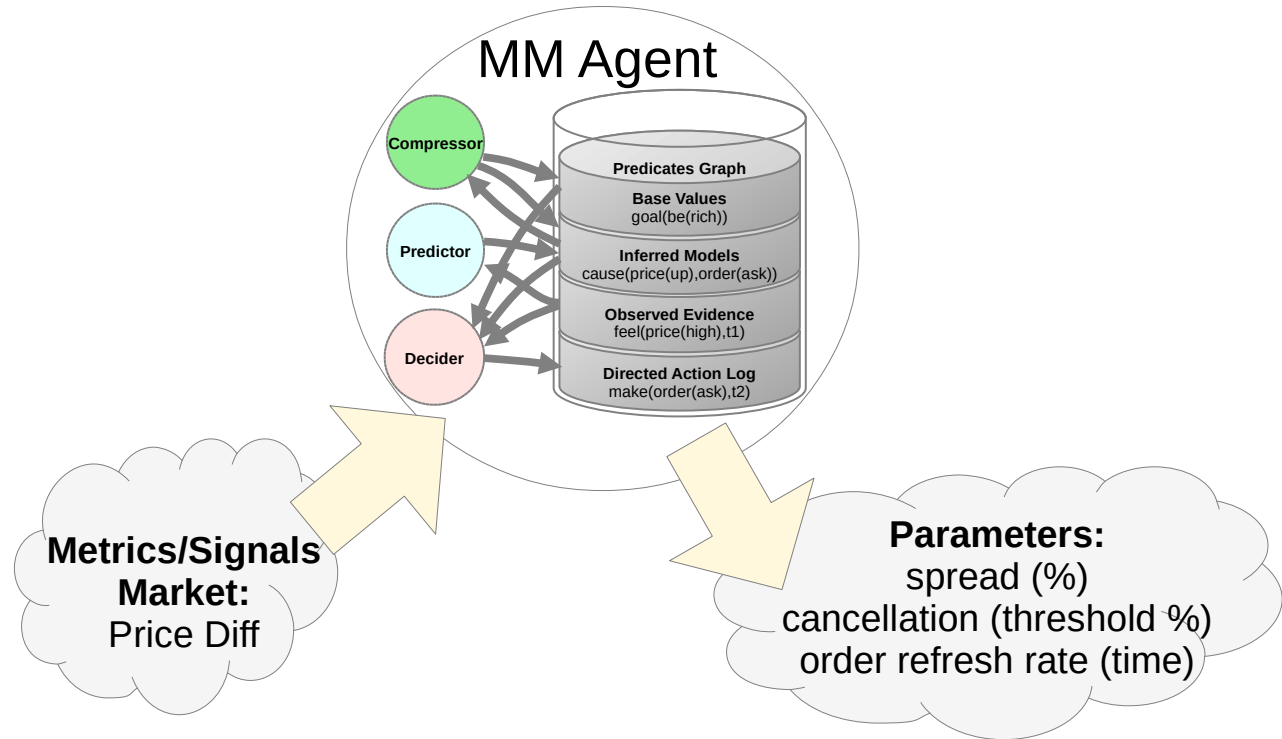Evgenii E. Vityaev Purposefulness as a Principle of Brain Activity // Anticipation: Learning from the Past, (ed.) M. Nadin. Cognitive Systems Monographs, V.25, Chapter No.: 13. Springer, 2015, pp. 231-254.

Anton Kolonin: Neuro-symbolic architecture for experiential learning in discrete and functional environments // AGI-2021 Conference Proceedings, 2021

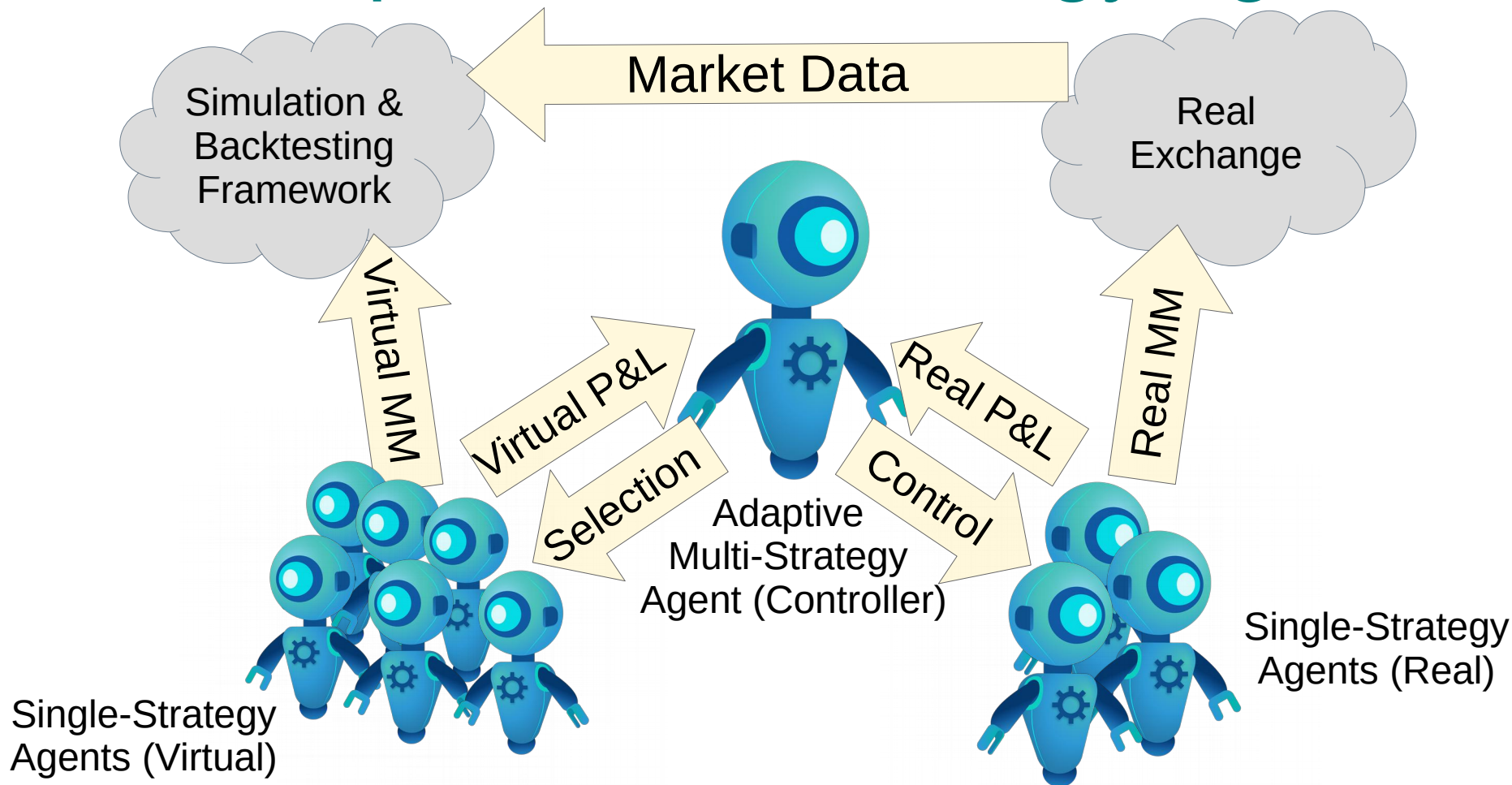# Operational Space for Market Making

Operational Space for Market Making (Simplified)

Adaptive Multi-Strategy Agent

Market Data

Simulation & Backtesting Framework

Real Exchange

Virtual MM

Virtual P&L

Real P&L

Real MM

Selection

Control

Adaptive Multi-Strategy Agent (Controller)
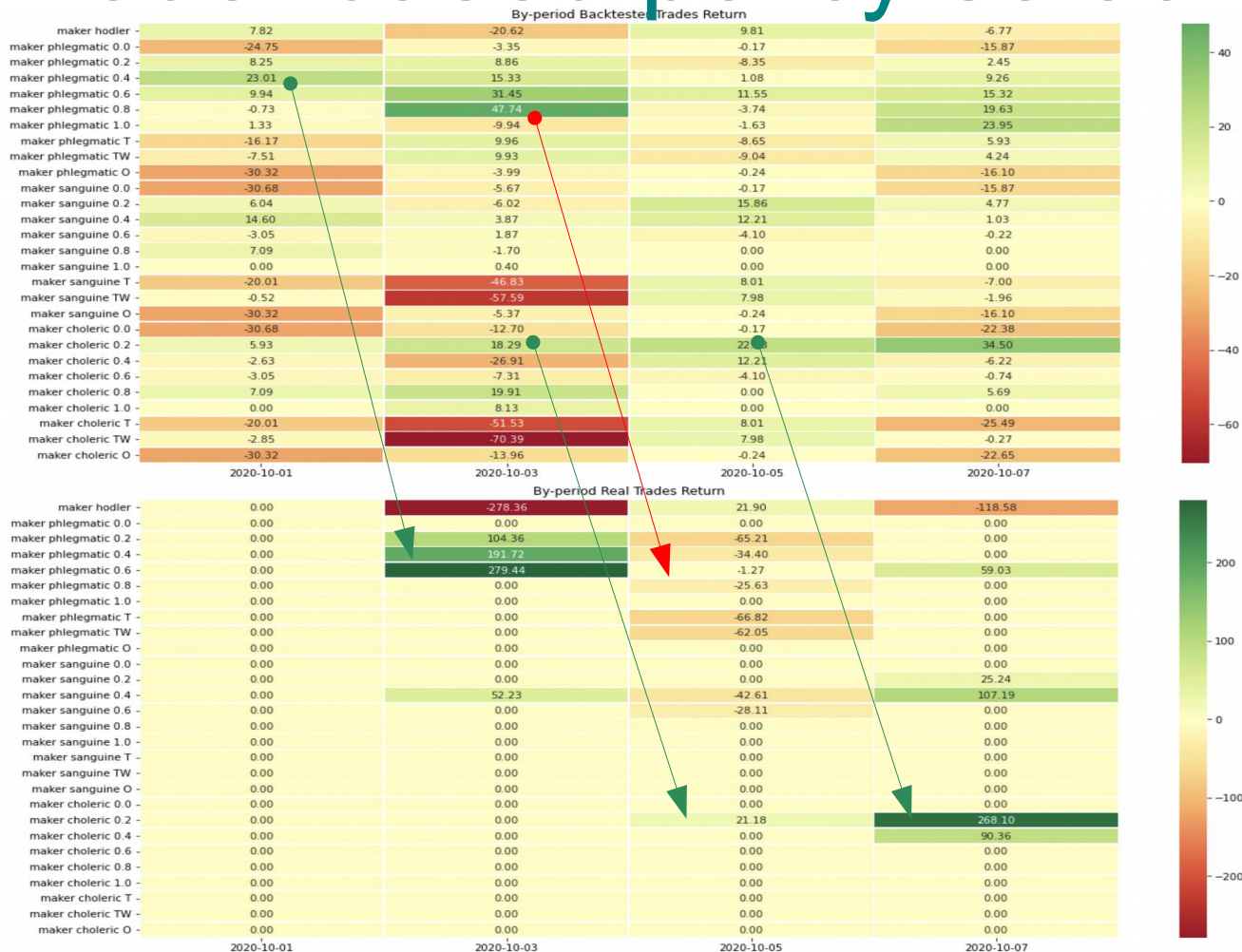
Single-Strategy Agents (Virtual)

Single-Strategy Agents (Real)
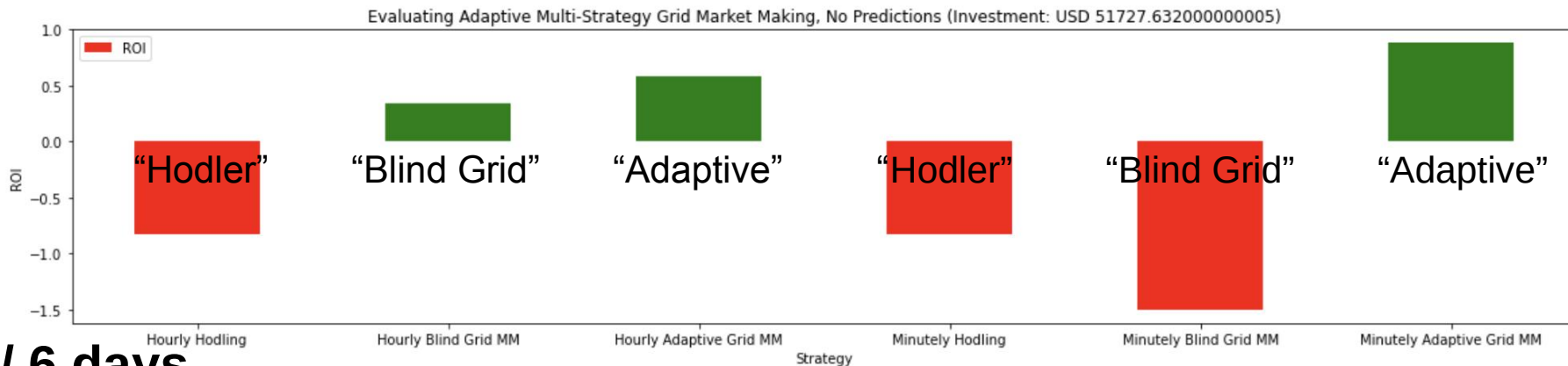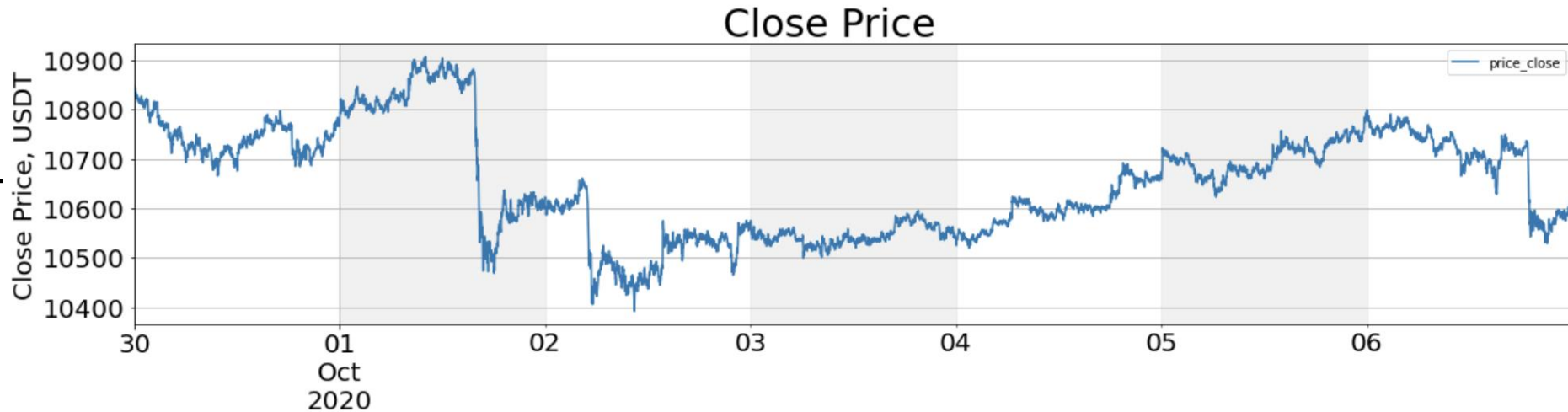
Real-time model-based policy selection

Profit and Loss for
Backtesting on
historical data /
Forward testing on
live market data

Profit and Loss for
Trading on
live market data
(still, "backtested")

ROI for adaptive MM strategy

BTC/
USDT

Close Price

Evaluating Adaptive Multi-Strategy Grid Market Making, No Predictions (Investment: USD 51727.632000000005)
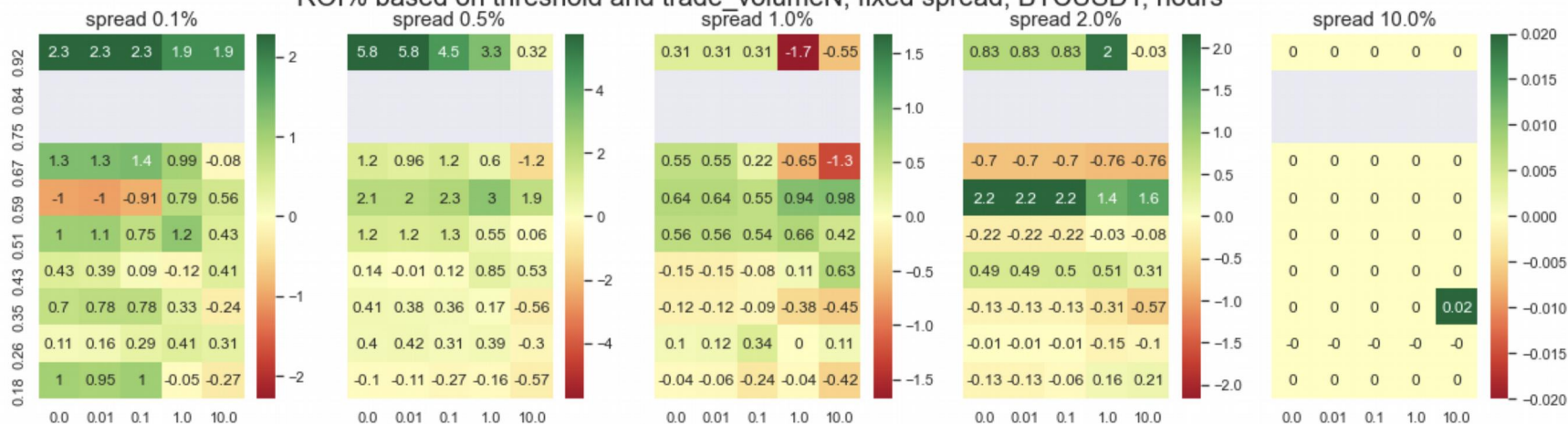

1% ROI / 6 days
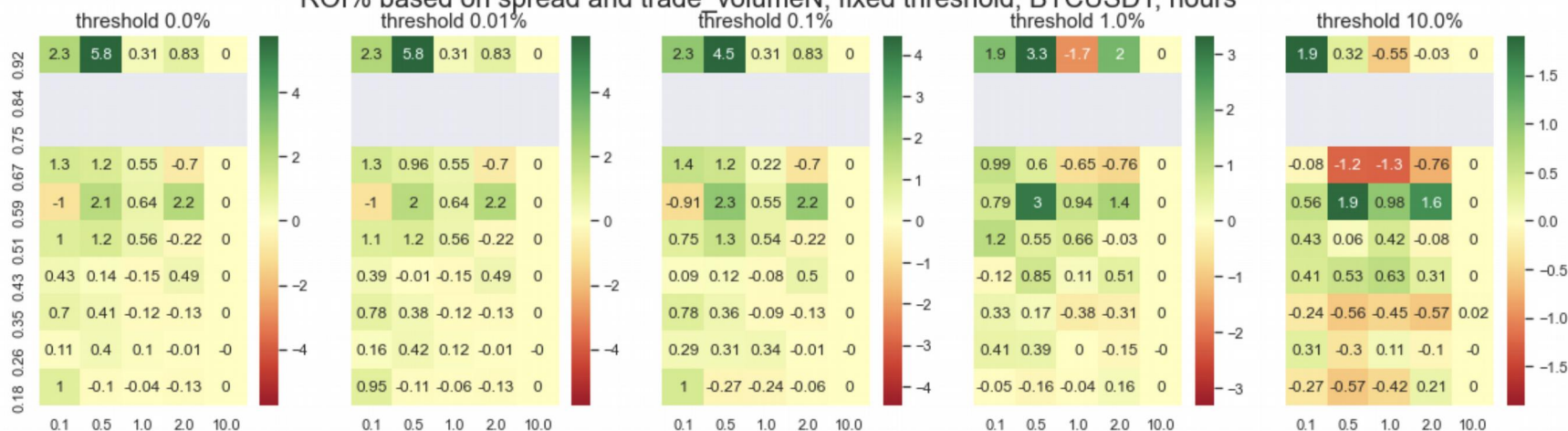**80% ROI / 1 year**

Hours

Minutes

Simulation and Backtesting for Strategy Selection

ROI% based on threshold and trade_volumeN, fixed spread, BTCUSDT, hours

ROI% based on spread and trade_volumeN, fixed threshold, BTCUSDT, hours

Publications

Architecture of Automated Crypto-Finance Agent
https://ieeexplore.ieee.org/document/9686345
https://arxiv.org/abs/2107.07769

Adaptive Multi-strategy Market Making Agent
https://link.springer.com/chapter/10.1007/978-3-030-93758-4_21

Adaptive Multi-Strategy Market-Making Agent For Volatile Markets
https://arxiv.org/abs/2204.13265

Causal Analysis of Generic Time Series Data Applied for Market Prediction
https://arxiv.org/abs/2204.12928

Social Media Sentiment Analysis for Cryptocurrency Market Prediction
https://arxiv.org/abs/2204.10185

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Thank you and welcome!

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