



**BLACKHEATH**  
Fund Management Inc

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Liquidity | Transparency | Absolute Returns

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## **AI GLOBAL MACRO STRATEGY**

**Presented by Benjamin Chung**

1 JANUARY 2019

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## COMPANY OVERVIEW: BLACKHEATH FUND MANAGEMENT INC.

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### Blackheath Fund Management Inc. (“Blackheath”)

is a Commodity Trading Advisor (“CTA”), with headquarters in Toronto, Canada.

- A member of the National Futures Association (NFA); registered in the US with the CFTC and in Canada with the Ontario Securities Commission (OSC)
- Professional staff of 5
- Management team has over 25 years experience in exchange-traded derivatives

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## COMPANY OVERVIEW: INVESTMENT STRATEGIES

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### Blackheath offers Proprietary Investment Strategies,

with each strategy aiming to deliver risk adjusted returns that outperform the broad market indices and are uncorrelated to traditional asset classes.



**Blackheath AI Global Macro Strategy**  
aims to earn abnormal returns in foreign  
exchange using machine learning to  
analyze macro-economic data.

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## STRATEGY OVERVIEW: PORTFOLIO PARAMETERS

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### Every Managed Account in the Blackheath AI Global Macro Strategy

is traded using the same methodology:

- US \$200,000 minimum account size
- Margin to equity ratio ranges from 0-30% (8% on average)
- Maximum 10 futures markets
- Currency futures markets only
- 50% notional funding allowed
- Approx. 800 round-turns per annum for \$1 mil in equity

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## BLACKHEATH DEEP FIELD MACRO STRATEGY: STRATEGY DESCRIPTION

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### The Strategy aims to earn significant uncorrelated returns in foreign exchange

by taking speculative 1-month long positions in liquid global currency futures.

- Blackheath AI Global Macro Strategy applies algorithms developed within the field of Machine Learning to filter through macro-economic data and develop an understanding of each global currency's fundamental macro-economic environment, bringing to reality actionable economic information that was previously unseen.
- This information is then traded in a truly quantitative and systematic process maximizing capital growth - aside from risk tolerance, there are practically no other discretionary inputs.
- The Strategy is both algorithmic and quantitative.

## OVERVIEW: AI GLOBAL MACRO STRATEGY

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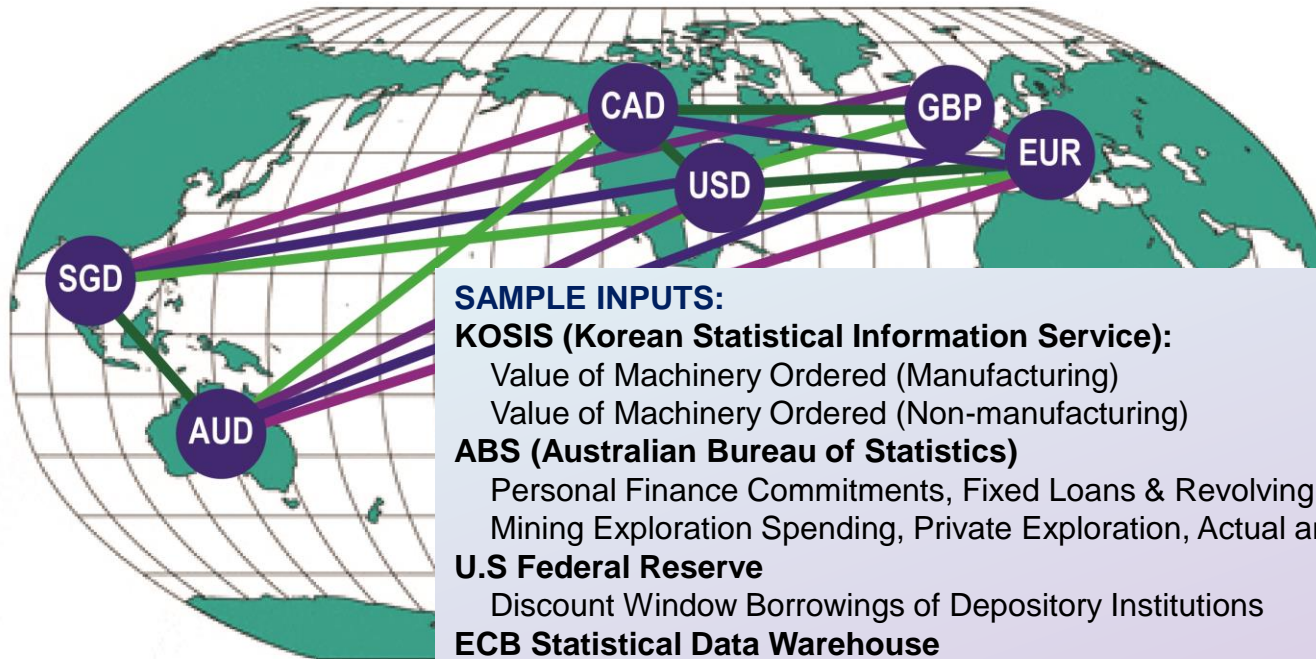
### Key Points

- No subjective or discretionary inputs
- No price or technical factors such as MACD, SMA, etc.
- Purely quantitative and automated

## OVERVIEW: AI GLOBAL MACRO STRATEGY

### Economic Inputs

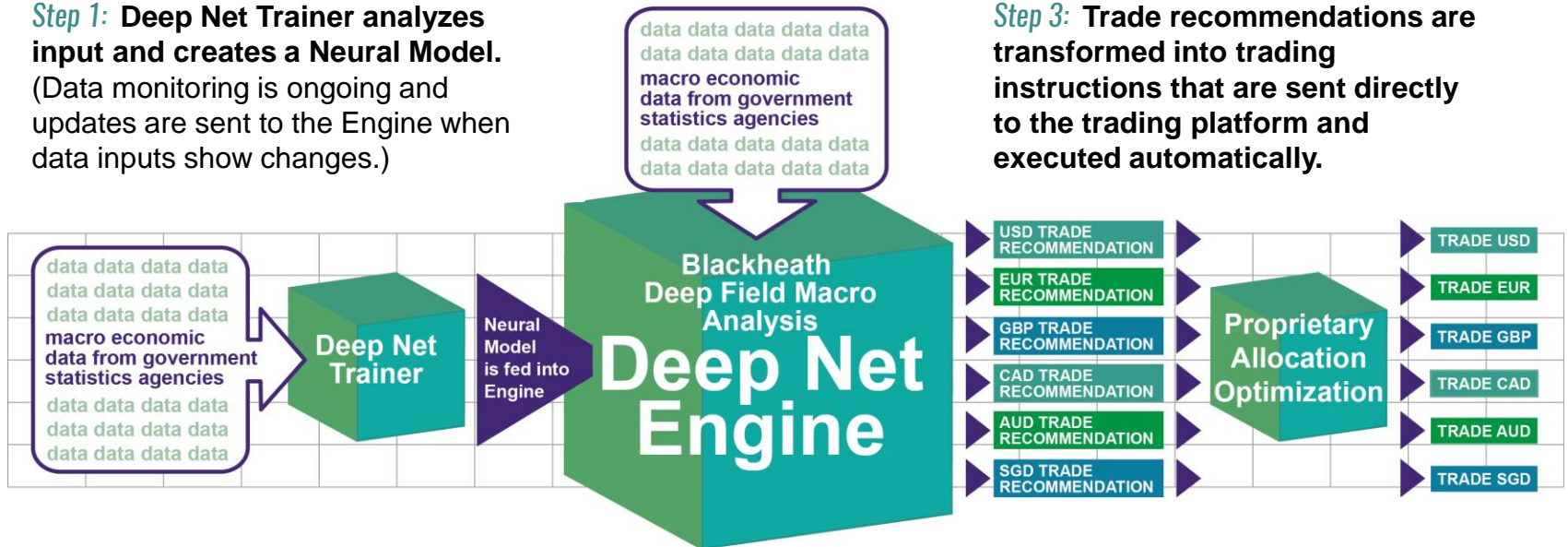
Our model takes a variety macro economic data from government agencies in markets that affect the currency futures we trade, and analyzes it our Deep Net Engine.



- SAMPLE INPUTS:**
- KOSIS (Korean Statistical Information Service):**
    - Value of Machinery Ordered (Manufacturing)
    - Value of Machinery Ordered (Non-manufacturing)
  - ABS (Australian Bureau of Statistics)**
    - Personal Finance Commitments, Fixed Loans & Revolving Credit
    - Mining Exploration Spending, Private Exploration, Actual and Expected Expenditure
  - U.S Federal Reserve**
    - Discount Window Borrowings of Depository Institutions
  - ECB Statistical Data Warehouse**
    - Commercial and Industrial loans excluding reverse repos, non-MFI

## OVERVIEW: HOW IT WORKS

**Step 1: Deep Net Trainer analyzes input and creates a Neural Model.**  
(Data monitoring is ongoing and updates are sent to the Engine when data inputs show changes.)



**Step 3: Trade recommendations are transformed into trading instructions that are sent directly to the trading platform and executed automatically.**

**Step 2: The Deep Net Engine collects and analyzes new data continuously, and creates trade recommendations for the chosen currency futures.**

COMMODITY TRADING INVOLVES SUBSTANTIAL RISK OF LOSS. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.



## OVERVIEW: HOW IT WORKS

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### Economic data

- Driven by low-level economic fundamentals

### Month-long holding period

- Captures currency moves driven by underlying economic activity

### Purely quantitative

- Only discretionary element is portfolio-wide risk tolerance (Kelly Fraction)

### Extensive use of leading-edge Machine Learning

- 10 years of experience. Hedge funds just beginning to assemble machine learning teams to tackle global macro.

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## OVERVIEW: RISK MANAGEMENT

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### Three Discretionary Parameters have been put in place:

- In the event that the team believes the Algorithm is not performing to expectations, the connection between the Deep Net Engine and the markets will be severed.
- Large geopolitical risks can overwhelm fundamental inputs at any time. If the team believes such risks are present, we will reduce our target volatility and/or liquidate positions.
- Intra-month losses in excess of 12.5% will cause overall position sizes to be reduced by 25%. At intra-month losses of 25%, the portfolio size will be reduced by another 25%.

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## BACKGROUND: NEPTUNE AI MACRO FX FUND LTD\*

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### The Blackheath AI Global Macro Strategy builds on the Neptune Strategy.

Developed by Benjamin Chung before joining Blackheath, Neptune primarily traded FX forwards, while Blackheath AI Global Macro will be purely trading FX futures. However, both investment strategies use the same machine learning strategies to create both a trainer and an engine to analyze data and develop the trading allocations.

The Neptune track record is not representative of Blackheath AI Global Macro's potential future results, but does illustrate how Ben's programming worked in another variation.

## PERFORMANCE: NET PERFORMANCE OF THE STRATEGY

### Blackheath AI Global Macro Strategy Pro-forma, Composite Net Returns<sup>†</sup>

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
<b>2018</b>	3.74%	-2.05%	7.20%	4.19%	6.13%	-3.65%	-0.89%	-2.73%	-2.99%	0.11%	-3.72%	-9.13%	<b>-4.95%</b>
<b>2017</b>											5.51%	-1.62%	<b>3.80%</b>

The strategy has returned **-1.34%** since its inception in November 2017.

<sup>†</sup> Starting in July 2018, the track record shows the composite performance of the strategy, calculated using the Only Accounts Traded (OAT) method. From Nov 2017 to Jun 2018, (colored background), the performance shown is the proprietary, pro-forma net returns of the strategy, based on the actual trading results as observed in proprietary accounts traded under the strategy, assuming a fee structure of a 2% Management Fee and 20% Incentive Fee paid quarterly. In reality, these accounts could have different fee structure. Such a fee related assumption can lead to moderate leveraging in the account over certain time periods during the course of this track record. Also, please note that the proprietary account has favourably negotiated trading commissions. Additional details of this computation and calculation of the performance are available upon request.

Net returns are calculated assuming a fee structure of a 2% Management Fee accrued monthly and a 20% Incentive Fee paid quarterly. Separately Managed Account performance can be higher or lower than the above reported performance of the program depending on several factors, such as commission and fee levels, investment amount, duration, the actual prices achieved, the portfolio composition and government taxes (if any). While the results here are based on pro-forma adjustments assuming the given fee structure, in reality, accounts may have a different fee structure, a different fee payment periodicity, different (higher or lower) commission levels and government taxes (if applicable) which may significantly distort the net performance observed in an actual account. Also, in reality, some managed accounts can be traded with a higher leverage and such leverage changes over time and this could result in significantly different performance in an actual account.

COMMODITY TRADING INVOLVES SUBSTANTIAL RISK OF LOSS. PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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## PORTFOLIO MANAGER

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**Frankie Liu, CFA,**

is the Portfolio Manager of Blackheath AI Global Macro Strategy.

In addition to his responsibility for Blackheath AI Global Macro Strategy, Frankie is the Head of Research at the firm. His responsibilities include developing proprietary trading software, building quantitative pricing models as well as conducting research in asset price dynamics.

After graduating from the University of Chicago in 2009 with Bachelor's degrees in Mathematics and Economics, Frankie has worked as a trader and managed options books in both commodities and foreign exchange markets. Frankie received his CFA® charter in 2013.



*Frankie Liu*  
Portfolio Manager

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## STRATEGY CONSULTANT

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### Benjamin Chung

is the Strategy Consultant for Blackheath AI Global Macro Strategy.

Ben Chung was an early champion of machine learning's potential for application to absolute return strategies. He created the world's first opensource Object-Oriented Deep Learning library (Java) and released it under the GPLv2 in 2007 and continued to work on its development through 2012.

From 2009 to 2012 Ben was employed as a Portfolio Analyst, for the Canadian Pension Plan Investment Board's Global Tactical Asset Allocation Group. There he conducted research on macroeconomic forecasting models for the Group's emerging market currencies portfolio.

In 2013, Ben struck out on his own, launching the Neptune AI FX Fund Ltd, a neural-network, fundamental strategy. This program founds the basis of the trading method Ben is employing in the Blackheath AI Global Macro Strategy.

Ben is a graduate of the University of Toronto in Computer Science.



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