Paragon blends multiple systematic ideas to profit on uncorrelated events

The quant-focused shop uses a fully rules-based, systematic approach that dictates all trades and aims to take advantage of a wide range of anomalies

The Paragon private hedge fund is developing a strong track record with its South African artificial intelligence long/short equity strategy, employing proprietary algorithms to generate alpha while trading JSE-listed companies.

Johannesburg-based co-managers Ryan Swartzberg, Evan Fotopoulos and Byron Vos studied actuarial science together at the University of the Witswatersrand, while Shashwat Malot, based in India, studied aerospace engineering.

"We share common interests and passions in quantitative finance, statistics and actuarial science and we are passionate about applying the latest developments in computing to trading," says Fotopoulos. "What started out as a hobby has turned into something where we believe we can add real value, applying our data science and machine-learning skills to the markets."

The team joined in January 2015, trading privately for a year before launching the Paragon private hedge fund in February 2017. The fund currently sits on the Peregrine Fund Platform as an *en commandite* partnership. The team aims to convert to a qualified investor hedge fund (QIF) as soon as possible.

The fund started with seed capital of around R30 million. It has capacity for up to R1 billion with durable strategies in place that are designed to scale as assets grow.

> **"Our method of blending strategies aims to position the portfolio to prevailing styles in the market at any stage"**
>
> *Evan Fotopoulos*

The fund is designed to have a low correlation to other asset classes, largely driven by an evolving set of diversified trading algorithms that profit from uncorrelated market phenomena.

The team employs multiple strategies to generate alpha, currently trading South African equities and equity-linked derivatives. A variety of long and short algorithms use state-of-the-art statistical techniques, machine learning and artificial intelligence methods to generate outperformance, seeking to profit from anomalies driven by macro-economic, fundamental, quantitative and behavioural factors.

This is combined with a robust risk-management framework and a proprietary money-management system that dynamically allocates capital based on each strategy's expected statistical behaviour.

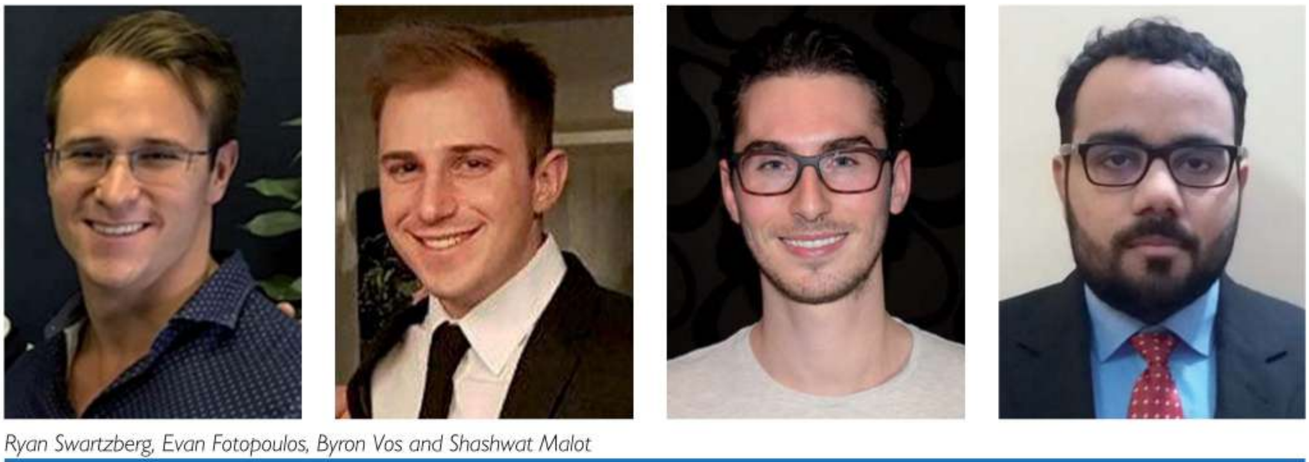
Swartzberg has a B.Sc. with Honours in Actuarial Science from the University of the Witwatersrand. He has a passion for technology, and an exceptional understanding of how I.T. can be commercialised. In 2008, he founded Top Dog Education, a profitable, online education company pioneering personalised learning through technological intervention.

Fotopoulos also holds a B.Sc. with Honours in Actuarial Science from the University of the Witwatersrand. He previously worked at Alexander Forbes in the actuarial team, where he was involved in asset-liability modelling that set strategic asset allocations for pension funds and also in liability and financial instrument valuations.

Shashwat Malot holds a B.Tech in Aerospace Engineering from the Indian Institute of Technology, India's premier engineering institute. He has six years' experience in developing quantitative trading strategies for Indian markets, with a successful track record. Malot has worked at a stock-broking firm providing investment advice to Singaporean and Hong Kong investment banks, and also at Indian asset management firm Karvy Capital, building quantitative strategies for their hedge funds.

Vos holds a B.Sc. with Honours in Actuarial Science from the University of the Witwatersrand. He was the top IEB student of 2009 and the top first-year applicant at Wits in 2010, graduating *cum laude* and at the top of his class in both his undergraduate (2012) and honours (2013) years. He received the Liberty Life and Sanlam awards for the highest mark in the 2013 actuarial science honours class.

The team employs a fully rules-based, systematic approach that dictates all trades,



Ryan Swartzberg, Evan Fotopoulos, Byron Vos and Shashwat Malot aiming to take advantage of a wide range of anomalies in the markets.

Their process includes developing theories based on appropriate data and then extensively back-testing them before including them in the fund. The team takes a shorter-term trading style, with the average holding period for a position at around 30 days. They apply strict liquidity criteria when choosing an investible universe for their strategies.

"It's a multi-strategy approach based on our proprietary models and money-management framework," says Fotopoulos. "Our method of blending strategies aims to position the portfolio to prevailing styles in the market at any stage."

The fund runs about 20 different strategies at any given time, taking advantage of mean reversion and momentum.

"We broadly classify strategies into two categories: mean-reversion strategies look to profit off spreads between stocks, or baskets of stocks, widening and narrowing. A mean reversion strategy generally takes advantage of the fact that if a spread has widened, it is likely to narrow. On the other hand, we consider a momentum strategy as a strategy that is based on the belief that if a stock has gone up it will continue to do so."

Allocation to strategies is controlled in two ways. As a strategy proves itself with live money, the money-management framework will scale up exposure to it. In addition, certain individual strategies contain faster-acting "regime filters" that aim to prevent them from trading when prevailing market conditions are perceived to be unfavourable.

"Having said this, we try to keep the number of rules that we add to a strategy to a minimum. It is a delicate balance and we constantly evaluate whether or not our rules make sense. We will only add a rule to a strategy if it significantly adds to the strategy. This is because we believe that a strategy that has more rules will have better historical results, but this is likely a result of over-fitting the data."

The fund typically trades 20-40 positions at any given time, with gearing in the 0.8-1.2 times range (up to a maximum of two times).

The strategy added a net 24.5% last year, trading as a segregated mandate, against a 2.63% return from the JSE All Share Index and -1.5% from the JSE Top 40. So far this year to the end of June it is 2% lower, versus 3.37% from the JSE All Share Index and 4.9% from the JSE Top 40.

Returns have been generated with a low correlation to the JSE All Share Index, with the strategy's worst month in February at -1.7% compared with -3.91% from the Top 40, and its best month at 0.53% in April versus 4.22% from the Top 40.

The team is continuously monitoring its strategies in tricky markets, with a strong capital-preservation mindset based on their actuarial backgrounds. They believe that returns and risk management need to be considered together.

"We have worked very hard and continue to work very hard, and we look forward to building on to our successes to date," says Fotopoulos.

In six months' time, the team is launching a similar strategy in the Indian market, which will first be available to an exclusive group of investors.

FUND FACTS

Paragon Hedge Fund

Strategy: Long/short equity
Investment manager: Peregrine Fund Platform
Managers: Ryan Swartzberg, Evan Fotopoulos, Byron Vos, Shashwat Malot
Inception date: February 2017
Assets under management: R29 million
Structure: Private hedge fund (partnership)
Prime broker: Peregrine Prime Broking
Auditors: Deloitte
Administrator: Zurich Fiduciary Group