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Venture-Capital Firms Use Big Data to Seek Out the Next Big Thing

A small group of firms hope to use analytics to gain an advantage over mere humans



Some venture-capital firms are using analytics in hopes of making venture investing less of an art and more of a science. ILLUSTRATION: DANIEL HERTZBERG FOR THE WALL STREET JOURNAL

By Alexander Davis

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Computers are on the rise as Wall Street's brave new stock pickers. Now some Silicon Valley startup investors are giving big-data analytics a prominent role in the venture-capital arena.

In recent years a small group of emerging venture firms have been testing ways to remake the art of venture capital and turn it into more of a science. They're relying to varying degrees on what are, for their industry, radical new uses of software and data to help guide their investments.

Early-stage firm SignalFire, launched in San Francisco in 2015, mines vast troves of proprietary databases in real time to identify investment targets and support their development. Correlation Ventures brings proprietary data analytics and predictive computing into its decision-making on joining deals as a co-investor.

NFX Guild, an investment firm that also has an accelerator for startups, runs software in the cloud that can help its startups find new investors.

Using the latest technology to find the best deals and help startups grow can make venture investors stand out from the crowd.

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“A few days of advantage can mean the difference between winning and losing a deal,” says SignalFire Chief Executive Chris Farmer. Compared with this new computer-driven approach, he says, operating the traditional way “is playing a game of telephone—with tin cans and a string.”

Helping the humans

In some ways this urge to automate key parts of venture investing mirrors Wall Street’s recognition that computers do some things not only faster but also better than people when it comes to crunching gigantic sets of data.

BlackRock Inc., the world’s largest asset manager, recently showed some of its

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stock pickers the door, having watched algorithmic and other computerized trading revolutionize the securities industry. Computer models are now doing more of the work that had been done exclusively by human asset managers who have long created sophisticated trading strategies.

In Silicon Valley, SignalFire uses software, data science and analytics in an effort to capture superior returns for its investors by both picking the right companies to invest in and helping them thrive. The firm's \$53 million first fund aims to make 35 investments, and is about halfway there.

With former Google and Yahoo machine-learning experts on its staff, SignalFire says it finds investment opportunities by tracking millions of data sources in real time, such as monitoring capital flows into startups and movements of key employees. To gain useful insights, SignalFire has amassed its own vast sets of data on things like how companies react to competition, how satisfied their employees are and how their performance stacks up against that of their peers.

Ultimately, says Mr. Farmer, spotting a unique investment opportunity is still a human talent—but the data analysis his firm does helps the best candidates stand out more. “We’re using our technology to weaponize people with superhuman anomaly-detection powers,” he says.

Talent search

SignalFire also uses a similar approach to helping its startups solve an ever-present problem for Silicon Valley founders: finding and attracting talent. The firm monitors and analyzes data about potential employees, such as their career moves and accomplishments, to help its portfolio companies with recruitment of rising stars.

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Partners at Correlation Ventures have enlisted computer models to help them make speedy investment decisions so the firm can position itself as the ideal co-investor.

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Financing rounds for startups can drag on for many months as the companies' founders search for investors that can provide the funding they need but won't ask for too much influence in return. For many startup founders, as much as one-third of their time is spent on fundraising

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and investor relations.

Correlation, which closed its first fund in 2012, guarantees an investment decision within two weeks, and never takes a board seat. The firm's approach is designed to achieve solid returns and mitigate risk by making dozens of investments each year across all sectors and investment stages, says David Coats, managing director. The firm has offices in Palo Alto, Calif., San Diego and New York.

Mr. Coats says Correlation's data-heavy approach uses proprietary analytics and predictive modeling to glean positive or negative investment signals for an ocean of investment options—a promising market opportunity for a startup, for instance, or worrisome signs of excessive cash burn.

Correlation's approach is similar to the deep, broad statistical analysis of baseball players and game situations that has become de rigueur for professional teams. The investing signals that Correlation weighs in making its decisions are akin to analyzing in exhaustive detail how particular pitchers and hitters will perform against each other in specific game situations, or even certain weather conditions, Mr. Coats says, and the firm has a vast amount of data to produce those signals.

"The database contains details for tens of thousands of historical financings with associated outcomes," Mr. Coats says. "These volumes provide a more than sufficient learning corpus for our predictive analytics-based models."

Looking ahead

"If our thesis holds," says Mr. Coats, "our portfolio will be tilted to the more favorable outcomes."

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It's still early, though, for Correlation, which recently raised \$200 million for its second fund, to say how well the formula works. Of the 121 companies that the firm's first fund invested in, most are still in the early stages of development; a handful have produced returns

for investors because they were acquired or went public, and about a dozen have gone bankrupt or out of business.

And what if the venture firms embracing computer analytics succeed?

Automation by definition takes the human out of the process. So is Silicon Valley's venture-capital corridor along Sand Hill Road in danger of becoming a ghost town? Even Mr. Coats says he hopes not. Predictive modeling can be powerful, he says, but for lead investors, "internal" human judgment is irreplaceable.

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