Coming Soon To A Classroom Near You: High-Speed Algo Trading

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NEW YORK (Dow Jones)--Later this month, eight new algorithms will be launched to find statistical advantages trading in two-year, five-year and 10-year U.S. swap rates. But in the end none of them will make or lose any money.

They might do more for the grade-point averages of the 38 Boston University graduate students enrolled in MF820, the first class in which algorithmic trading actually takes place within the classroom. Since January, students at the university's graduate mathematical finance program, a part of the School of Management, have been learning how to do high-frequency algorithmic trading with all of the speed but none of the money they hope to put to work on Wall Street.

Their professor, Ahmad Namini, is a trader and strategist at Fortress Investment Group. Namini alternates teaching sessions with Jeffrey Paul, a graduate of the program who now works at StreamBase Systems, the trading technology company that designed and donated more than $1 million worth of equipment the students use in the classroom.

"In terms of being prepared for Wall Street, they have to be computer scientists, applied mathematicians and they have to know a lot about finance," Namini said. "And if they're wrong, it costs millions of dollars and they get fired."

The collaboration between StreamBase and Boston University is just one of the new approaches high-speed, high-end finance is taking to get its youngest recruits ready for the trading desk.

"Twenty years ago, good traders were MBAs," said Mark Palmer, CEO of StreamBase. "Today they're geeks."

And while Boston University may be the first to have high-frequency trading in the classroom, other graduate schools are increasingly highlighting it in their curriculum.

Graduate programs in the mathematics of finance are now a vital part of training the newest breed of trader, reflecting the growing allure of finance-oriented math whizzes in a Wall Street era dominated by sophisticated algorithms and complex trading strategies.

For years, the recruits of traditional trading firms were largely undergrads who majored in finance or economics or MBAs. Neither arrived with enough experience in trading or developing trading strategies. Meanwhile, quantitative hedge funds and proprietary trading shops that recognized the value of the mathematically oriented brain were hiring math and physics Ph.D.s who could develop quantitative algorithms and trading strategies but had scant knowledge of finance and economics.

When interviewing students, "we would say, &apos;talk to me about execution strategies;&apos; and we&apos;d get blank, moderately embarrassed stares," said Richard Tibbetts, chief technology officer at StreamBase. "The actual mechanics of trading are completely absent from the curriculum."

These days, however, schools including Carnegie Mellon University and the University of Chicago are preparing students to enter Wall Street with programs blending math, finance and practical experience. Universities offering a master&apos;s program in the mathematics of finance are often located near big trading cities, including New York, Chicago and Boston, that enable practitioners to teach what in the past could only be learned on the job.

"Programs like this are training a new caliber," said Jay Damask, a part-time student in NYU&apos;s mathematics in finance program who also works at Ronin Capital, a proprietary trading firm. "Ten or 20 years ago, you could likely get a job and be trained on the job. That was very much the standard. Today, everything is more sophisticated."

In NYU&apos;s program, run under the umbrella of its Courant Institute of Mathematical Sciences, full-time students spend three semesters in classes such as stochastic calculus, risk and portfolio management with econometrics, time-series analysis and statistical arbitrage, and algorithmic trading and quantitative strategies, with most classes taught by adjuncts who work full-time on Wall Street. Students must also complete a summer internship and a master&apos;s thesis.
Petter Kolm, director of New York University’s M.S. program in mathematics of finance, noted that many practitioners initially didn’t believe in such programs. Nevertheless, NYU went ahead and opened its program on the subject in 1999.

"At the time, a lot of people said, ‘we don’t have a chance, because if we’re going to hire a quant, we’ll hire a physics or math Ph.D.,’" Kolm said. "People have since seen the true value in these programs."

When Boston University moved its graduate mathematical finance program to the business school from the math department two years ago, applications tripled to nearly 800, said its director Andrew Lyasoff.

"Ten years ago, the question was ‘is a mathematical finance program something that is viable?’" Lyasoff said. "Now we know the answer there."

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