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Alumnus' Idea Leads to Patent and Position with Technology Startup

… Luis Paris created computer algorithm in UM graduate school that leads to promising wireless applications

APRIL 22, 2013 BY EDWIN SMITH

OXFORD, Miss. – The consumption of mobile data continues to surge. In 2012 alone, mobile data usage grew 70 percent over the previous year and is expected to grow 18-fold by 2016, according to Cisco. This growth puts operators in a challenging position of trying to figure out how to manage the strain on existing networks.

Years ago, University of Mississippi alumnus Luis Paris anticipated this trend in the mobile market and designed a new technique to compress and encrypt data in a faster, more efficient way. This enables operators to increase their network capacity without incurring significant capital expenses.

Chief scientist at CENTRI Technology, Paris singlehandedly invented cache-mapping compression, or CMC, a new class of patented data compression algorithms that accelerates and secures the transfer of data that originates from a mobile device and crosses an operator's network. He decided to assign his intellectual property rights to the university and work with the university's technology transfer office to patent and commercialize it.

"The novelty of the technology lies in the use of a cache memory as the main data structure to achieve compression of digital information," Paris said. "A cache memory is a computer organization concept typically implemented by processor manufacturers – e.g., Intel, AMD, TI, etc. – in their integrated chips to speed up memory access."

In his doctoral thesis, Paris proved that cache memories have other applications in computer engineering fields, such as information theory, to achieve high-speed, real-time data compression. New instances of the CMC family achieve compression ratios higher than most traditional statistic or dictionary-based techniques at a fraction of their speed and implementation cost.

"This is a very attractive proposition for the mobile, wired and online application industry, as well as for other vertical markets," Paris said. "The M.S. and Ph.D. degrees that I earned in computer science from the University of Mississippi opened the doors of opportunity to do what I enjoy the most: teaching, research and development."

After filing a patent application, UM's technology management group partnered with Mindforce Consulting to market the technology. Mindforce believed that the application of the CMC technology was uniquely suited for mobile use. Through existing relationships, they contacted Vaughan Emery, a Seattle-based entrepreneur with a background in mobile security and computer networking.

It was a perfect match, considering Seattle is where many wireless companies have their founding roots.

"Dr. Paris is a co-founder and has been the chief scientist at CENTRI since the company was formed as a technology transfer out of Ole Miss in 2009," said Emery, the company's CEO and president. "He is an exceptionally gifted computer scientist who invented a compression technology uniquely suited to address the need for mobile and wireless network optimization. On a personal basis, Luis is a dedicated colleague with a well-balanced home and work ethic."

Following graduation, Paris accepted a faculty job at Harrisburg University in Pennsylvania. He began consulting with CENTRI shortly after it began operation in 2009, and it soon became apparent that the company needed his full-time attention.

"The time to market conceptual ideas into actual product offerings is critical," Paris said. "In order to keep up with the innovation pace required to drive scientific research into practical solutions, I had to quit my faculty job and focus 100 percent of my time on CENTRI and enhancing its solutions."

As chief scientist, Paris oversees the research of intelligent data compression protocols, maintains the

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OXFORD, Miss. – Eleven University of Mississippi students spent their winter break learning about the people who work behind the scenes of the American government in Washington, D.C. Lead by Jonathan Klingler, assistant professor of political science, the students of Pol 391: Applied Politics met not with candidates, but with the people who make candidates'

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OXFORD, Miss. – Stephanie Jennings Teague, of Chicago, sees her commitment of $100,000 to the Patterson School of Accountancy's new building at the University of Mississippi as a means of saying "thank you." "It is a way to show a small token of my appreciation to Ole Miss, the faculty and staff, and the accounting

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U.S. inflation roller coaster prompts fresh look at long-ignored money supply By Michael S. Derby NEW YORK – The amount of money sloshing around the U.S. economy shrank last year for the first time on record, a development that some economists believe bolsters the case for U.S. inflation pressures continuing to abate. The Federal Reserve's

company's proprietary data acceleration solution and continues to create intellectual property to drive product innovation and engineering.

Paris' innovations continue playing a vital role in CENTRI's success, Emery said.

"The original algorithms and licensed software proved to be faster and more efficient at data compression than existing, more mature solutions in commercial use today," he said. "Once productized, the cache mapping compression technology has been at the core of CENTRI's network performance and bandwidth management solution."

The fact that a Seattle entrepreneur with expertise in wireless communications hooked up with a graduate student at Ole Miss didn't happen by accident.

"I knew the first time I met Luis that he had created a technology that had great commercial potential," said Walter Chambliss, UM director of technology management. "Allyson Best (associate director of technology management) and I worked with Luis to secure two U.S. patents and negotiate a license agreement with CENTRI to develop the technology in the telecommunications field. This story is an excellent example of how the Office of Research and Sponsored Programs supports graduate students and entrepreneurs who wish to partner with university researchers."

Emery agrees.

"CENTRI was founded with a technology transfer from the University of Mississippi, and the University of Mississippi Research Foundation is still an equity holder in the company," he said. "Its Series A financing of $1.5 million was raised in 2011 through an angel group located in Seattle. The startup is gaining traction, having completed a Series B round of funding in November 2012, which brought it $4.5 million in venture capital from investors led by the Matthew Pritzker Co., a private investment firm in Chicago."

Although committed to his corporate career and research, Paris said teaching and working with students has made a huge impact on his overall career and professional development.

"Above all, it is the success stories of those students that I treasure the most and gives me the greatest satisfaction," he said. "Eventually, I hope to give back as an academe what I learn and apply daily as researcher and developer within the fast-paced wireless industry."

For more information about CENTRI Technology, visit **http://www.centritechnology.com**

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