



CENTRO DE INVESTIGACIÓN Y DE ESTUDIOS AVANZADOS DEL IPN

El Departamento de Control Automático

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Advances in sequence alignment: What lies beyond BLAST?

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Abstract: Sequence alignment is a standard problem in genomics and proteomics. This lecture will describe the next steps in sequence alignment, that generalize the well-known BLAST (Basic Local Alignment Search Technique) to the case where the sequences to be aligned exhibit a Markovian dependence. The conventional BLAST theory assumes that the sequences are sample paths of i.i.d. processes.

Biography: Dr. Mathukumalli Vidyasagar was born in Guntur, India on September 29, 1947. He received the B.S., M.S. and Ph.D. degrees in electrical engineering from the University of Wisconsin in Madison, in 1965, 1967 and 1969 respectively. Between 1969 and 1989, he was a Professor of Electrical Engineering at various universities in the USA and Canada. Then, his last job was with the University of Waterloo, Waterloo, ON, Canada, where he served between 1980 and 1989. In 1989, he returned to India as the Director of the newly created Centre for Artificial Intelligence and Robotics (CAIR) in Bangalore, under the Ministry of Defence, Government of India. Between 1989 and 2000, he built up CAIR into a leading research laboratory with about 40 scientists and a total of about 85 persons, working in areas such as flight control, robotics, neural networks, and image processing. In 2000, he moved to the Indian private sector as an Executive Vice President of India's largest software company, Tata Consultancy Services. In the city of Hyderabad, he created the Advanced Technology Center, an industrial R&D laboratory of around 80 engineers, working in areas such as computational biology, quantitative finance, e-security, identity management, and open source software to support Indian languages. In 2009 he retired from TCS, and joined the Erik Jonsson School of Engineering & Computer Science at the University of Texas at Dallas, as a Cecil & Ida Green Professor of Systems Biology Science.