

Wide-Area Languages

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1 Abstract

I discuss the implications of programmable wide-area networks on programming language features and design. Wide-area networks (WANs) provide a fundamentally different computational infrastructure than local-area networks (LANs). As with the switch from mainframes to LANs, the semantic difference of WANs will eventually be reflected in programming language features. The spread of LANs in the 70's and 80's produced client-server computing and distributed object-oriented programming. The spread of WANs demands new advances including, for example, mobile secure computing.

2 About the Speaker

Luca Cardelli was born in Montecatini Terme, Italy, studied at the University of Pisa (until 1979), and has a Ph.D. in computer science from the University of Edinburgh (1982). He worked at Bell Labs, Murray Hill, from 1982 to 1985, and at Digital Equipment Corporation, Systems Research Center in Palo Alto, from 1985 to 1997, before assuming his current position at Microsoft Research Ltd, in Cambridge UK.

His main interests are in theory of programming languages, for applications to language design, semantics, and implementation. He implemented the first compiler for ML (the most popular typed functional language) and one of the earliest direct-manipulation user-interface editors. He was a member of the Modula-3 design committee, and has designed a few experimental languages, of which the latest is Obliq: a distributed higher-order language. His more protracted research activity has been in establishing the semantic and type-theoretic foundations of object-oriented languages, resulting in the recent book "A Theory of Objects" with Martin Abadi. Currently, he is interested in global and mobile computation.