



Evolutionary Computing in Optimization  
and Data Mining

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*Invited speaker:* **Kenneth De Jong**, George Mason University

*Presentation:* **High-Performance Evolutionary Algorithms**

*Abstract:* The successful use of evolutionary algorithms to solve difficult computational problems has led to its continuing application to problems of increasing size and complexity. The result is that standard “off-the-shelf” evolutionary algorithms (EAs) often generate less than adequate performance both in the time required to find acceptable solutions and/or the quality of the final results. If one adopts a “no free lunch” perspective, successful applications will require the EA practitioner to match EA algorithm properties with the properties of the applications.

In this talk I will describe such a matching framework and illustrate its use in designing high-performance EAs for a number of difficult computational problems.

*Personal Webpage:* <https://cs.gmu.edu/~kdejong/>

*Short bio:* Kenneth A. De Jong received his Ph.D. in computer science from the University of Michigan in 1975. He joined George Mason University in 1984 and is currently an Emeritus Professor of Computer Science, head of the Evolutionary Computation Laboratory, and associate director of the Krasnow Institute. His research interests include genetic algorithms, evolutionary computation, machine learning, and adaptive systems. He is currently involved in research projects involving the development of new evolutionary algorithm (EA) theory, the use of EAs as high-performance optimization techniques, and the application of EAs to the problem of learning task programs in domains such as robotics and game playing. He is an active member of the Evolutionary Computation research community and has been involved in organizing many of the workshops and conferences in this area. He is the founding editor-in-chief of the journal Evolutionary Computation (MIT Press), and a member of the board of ACM SIGEVO. He is the recipient of an IEEE Pioneer award in the field of Evolutionary Computation and a lifetime achievement award from the Evolutionary Programming Society.