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Alex Wiltschko - Automatic
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Overview Keynote: Automatic

Differentiation for Dummies CppCon
2015: Matt P. Dziubinski \"Algorithmie
Differentiation: C++\u0026 Extremum
Estimation\" Automatic Differentiation
Of Algorithms
In mathematics and computer algebra, automatic differentiation (AD), also called algorithmic differentiation, computational differentiation, autodifferentiation, or simply autodiff, is a set of techniques to numerically evaluate the derivative of a function specified by a computer program.

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an underlying program (or a subroutine) f, which takes n independent... 3. Wengert lists. In ...

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Automatic Differentiation of Algorithms provides a comprehensive and authoritative survey of all recent

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Automatic Differentiation of Algorithms provides a comprehensive and authoritative survey of all recent developments, new techniques, and tools for AD use. The book covers all aspects of the subject: mathematics, scientific programming (i.e., use of adjoints in optimization) and implementation (i.e., memory management problems).

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Automatic differentiation---the mechanical transformation of numeric computer programs to calculate derivatives efficiently and accurately---dates to the origin of the computer age. Reverse mode automatic differentiation both antedates and generalizes the method of backwards propagation of errors

used in machine learning. Despite this, practitioners in a variety of fields, including machine learning, have been little influenced by automatic differentiation, and make scant use of available tools.

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Automatic Differentiation of Algorithms: From Simulation ... Automatic Differentiation is a technique for augmenting computer programs with statements for the computation of derivatives based on the chain rule of differential calculus. The ADIFOR 2.0 system provides

automatic differentiation of Fortran 77 programs for first-order derivatives.

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