

# Ross Quinlan

From Wikipedia, the free encyclopedia

**John Ross Quinlan** is a computer science researcher in data mining and decision theory. He has contributed extensively to the development of decision tree algorithms, including inventing the canonical C4.5 and ID3 algorithms. He is currently running the company RuleQuest Research (<http://www.rulequest.com/>) which he founded in 1997.

## Contents

- 1 Education
  - 2 Artificial intelligence
    - 2.1 ID3
      - 2.2 C4.5
      - 2.3 C5.0
  - 3 Selected works
    - 3.1 Books
      - 3.2 Articles
  - 4 See also
  - 5 References
  - 6 External links

## Education

He received his BSc degree in Physics and Computing from the University of Sydney in 1965 and his computer science doctorate at the University of Washington in 1968. He has held positions at the University of Sydney, University of Technology Sydney, and RAND Corporation.

## Artificial intelligence

Quinlan is a specialist in artificial intelligence, particularly in the aspect involving machine learning and its application to data mining.<sup>[1]</sup>

### ID3

Ross Quinlan invented the Iterative Dichotomiser 3 (ID3) algorithm which is used to generate decision trees. ID3 follows the principle of Occam's razor in attempting to create the smallest decision tree possible.

### C4.5

He then expanded upon the principles used in ID3 to create C4.5.

C4.5 improved: discrete and continuous attributes, missing attribute values, attributes with differing costs, pruning trees (replacing irrelevant branches with leaf nodes).

### C5.0

C5.0 which Quinlan is commercially selling (single-threaded version is distributed under the terms of the GNU General Public License) is an improvement on C4.5. The advantages are several orders of magnitude faster, memory efficiency, smaller decision trees, boosting (more accuracy), ability to weight different attributes, and winnowing (reducing noise).

## Selected works

### Books

- 1994. *C4.5: Programs for Machine Learning*. Morgan Kaufmann Publishers. ISBN 1-55860-238-0.

## Articles

- Quinlan, J. R. (1986). Induction of decision trees. *Machine Learning*, 1(1):81-106.
- 2008. (with Qiang Yang, Philip S. Yu, Zhou Zhihua, and David Hand et al). *Top 10 algorithms in data mining*. *Knowledge and Information Systems* 14.1: 1-37 (<http://link.springer.com/article/10.1007/s10115-007-0114-2>).

## See also

- ID3 algorithm
- C4.5 algorithm
- Data mining

## References

1. Data Mining From an AI Perspective (<http://ieeexplore.ieee.org/iel4/6088/16304/00754923.pdf?arnumber=754923>)

## External links

- Ross Quinlan's personal homepage (<http://www.rulequest.com/Personal/>)

Retrieved from "https://en.wikipedia.org/w/index.php?title=Ross\_Quinlan&oldid=647977969"

Categories: Machine learning researchers | Living people | Computer specialist stubs

- 
- This page was last modified on 20 February 2015, at 02:38.
  - Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. By using this site, you agree to the Terms of Use and Privacy Policy. Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization.