Robin Milner – Verification, Languages, and Concurrency

Andrew D. Gordon, Microsoft Research
Robert Harper, Carnegie Mellon University
John Harrison, Intel Corporation
Alan Jeffrey, Bell Labs
Peter Sewell, University of Cambridge

ACM POPL 2011 remembers

Robin Milner 1934 – 2010

Winner of the 1991 ACM Turing Award

Citation for the 1991 ACM A. M. Turing Award

For three distinct and complete achievements:

1) **LCF, the mechanization of Scott's Logic of Computable Functions**, probably the first theoretically based yet practical tool for machine assisted proof construction;

2) **ML**, the first language to include polymorphic type inference together with a type-safe exception-handling mechanism;

3) **CCS, a general theory of concurrency**.

In addition, he formulated and strongly advanced full abstraction, the study of the relationship between operational and denotational semantics.

Double Thesis of his Inaugural Lecture

1) that the design of computing systems can only properly succeed if it is well grounded in theory,

2) and that the important concepts in a theory can only emerge through protracted exposure to application.

When one of his papers didn't solve a problem, it formulated the problem in such a clear manner that a graduate student or a young assistant professor could use it as the basis for his own work.

Matthias Felleisen

Robin was an inspiration not only to his many followers, but to his scientific colleagues and competitors and his personal friends (I was all three – a great privilege).

Tony Hoare

I had the honour of being the “outside” representative on the advisory board for Edinburgh’s LFCS and saw at first hand both how this developed the careers of younger members and what a conscientious Director Robin proved to be.

Cliff Jones

Well-typed programs don’t go wrong.

Robin Milner

His work has been, and continues to be, enormously influential, for example in the design of recent languages such as F# and Scala, or in surprising applications such as that of bigraphs to computational biology.

Gordon Plotkin

Milner was one of the most innovative and influential researchers in programming language theory, and more basically in the understanding of computational processes.

John Reynolds

I was blown away when I read Milner's "A proposal for standard ML"; not only was it a truly beautiful piece of language design, but the description was a model of clarity and concision.

Guy L. Steele, Jr.