Stanford

David Luckham

Professor (Research) of Electrical Engineering, Emeritus

Bio

BIO

Professor (Research) Emeritus of Electrical Engineering.

Research Professor of Electrical Engineering, Stanford University, 1977 to 2003.

Vinton Hayes Senior Research Fellow, Harvard University, 1976.

Senior Research Associate, Stanford Artificial Intelligence Laboratory, 1972-1977.

Associate Professor, UCLA Computer Science Department, 1970-1972.

Professor Luckham's research and consulting activities in software technology include multi-processing and business processing languages, event-driven systems, complex event processing, commercial middleware, program verification, systems architecture modelling and simulation, and artificial intelligence (automated deduction and reasoning systems).

Prof. Luckham has held faculty and invited faculty positions in both mathematics and computer science at eight major universities in Europe and the United States. He has been an invited lecturer, keynote speaker, panelist, and USA delegate at many international conferences and congresses. Until 1999 he was a member of the Computer Systems Laboratory, Stanford University and directed the Program Analysis and Verification Project. He taught courses on Artifical Intelligence and automated deduction, programming languages and program verification, the Anna verification system, systems prototyping and simulation languages, and Complex Event Processing. He was one of the founders of Rational Software, Inc. in 1981.

In the past he has served on review committees during the DoD Ada Language design competition, and was a Distinguished Reviewer on the DoD Ada9X design project. In 1993-94 he was a member of the TRW Independent Assessment Team tasked with reviewing the FAA's Advanced Automation System for the FAA, and in 1994-96 he was a distinguished reviewer for the DoD High Level Language for modelling and simulation. He has published four books and over 100 technical papers; two ACM/IEEE Best Paper Awards, several papers are now in historical anthologies and book collections. His 2002 book is a benchmark introduction to complex event processing, "The Power of Events" . His 2012 book , "Event Processing for Business" documents current applications of Complex Event Processing in many areas of Information Technology.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Electrical Engineering

Publications

PUBLICATIONS

- **Event-based execution architectures for dynamic software systems** *1st Working IFIP Conference on Software Architecture (WICSA1)*
  Vera, J., Perrochon, L., Luckham, D. C.
  KLUWER ACADEMIC PUBLISHERS.1999: 303–317

- **Rapide: A language and toolset for causal event modelling of distributed system architectures** *2nd International Conference on Worldwide Computing and Its Applications (WWCA 98)*
  Luckham, D. C.
  SPRINGER-VERLAG BERLIN.1998: 88–96

- **NSA's MISSI reference architecture - Moving from prose to precise specifications** *International Workshop on Requirements Targeting Software and Systems Engineering (RTSE 97)*
  Meldal, S., Luckham, D. C.
  SPRINGER-VERLAG BERLIN.1998: 293–329

- **AN EVENT-BASED ARCHITECTURE DEFINITION LANGUAGE** *IEEE TRANSACTIONS ON SOFTWARE ENGINEERING*
  Luckham, D. C., Vera, J.
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- **SPECIFICATION AND ANALYSIS OF SYSTEM ARCHITECTURE USING RAPIDE** *IEEE TRANSACTIONS ON SOFTWARE ENGINEERING*
  Luckham, D. C., Kenney, J. J., Augustin, L. M., Vera, J., Bryan, D., Mann, W.
  1995; 21 (4): 336-355

- **POLYMORPHISM AND SUBTYPING IN INTERFACES** *Workshop on Interface Definition Languages/1994 ACM Symposium on Principles of Programming Languages*
  Katiyar, D., LUCKHAM, D., Mitchell, J., Meldal, S.
  ASSOC COMPUTING MACHINERY.1994: 22–34

- **PARTIAL ORDERINGS OF EVENT SETS AND THEIR APPLICATION TO PROTOTYPING CONCURRENT, TIMED SYSTEMS** *JOURNAL OF SYSTEMS AND SOFTWARE*
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  1993; 21 (3): 253-265

- **OBJECT-ORIENTED MEGAPROGRAMMING** *SIGPLAN NOTICES*
  Wegner, P., Scherlis, W., PURTILO, J., LUCKHAM, D., Johnson, R.
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- **2-DIMENSIONAL PINPOINTING - DEBUGGING WITH FORMAL SPECIFICATIONS** *IEEE SOFTWARE*
  LUCKHAM, D., Sankar, S., Takahashi, S.
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- **ANNA - A LANGUAGE FOR ANNOTATING ADA PROGRAMS** *LECTURE NOTES IN COMPUTER SCIENCE*
  Luckham, D. C., VONHENKE, F. W., KRIEGBRUCKNER, B., Owe, O.
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- **TASK SEQUENCING LANGUAGE FOR SPECIFYING DISTRIBUTED ADA SYSTEMS** *LECTURE NOTES IN COMPUTER SCIENCE*
  Luckham, D. C., Helmbold, D. P., Bryan, D. L., HABERLER, M. A.
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- **TASK SEQUENCING LANGUAGE FOR SPECIFYING DISTRIBUTED ADA SYSTEMS** *LECTURE NOTES IN COMPUTER SCIENCE*
  Luckham, D. C., Helmbold, D. P., Meldal, S., Bryan, D. L., HABERLER, M. A.
  1987; 275: 249-305

- **CONCURRENT RUNTIME CHECKING OF ANNOTATED ADA PROGRAMS** *LECTURE NOTES IN COMPUTER SCIENCE*
  Rosenblum, D. S., Sankar, S., Luckham, D. C.
  1986; 241: 10-35

- **DEBUGGING ADA TASKING PROGRAMS** *IEEE SOFTWARE*
  Helmbold, D., LUCKHAM, D.
  1985; 2 (2): 47-57

- **AN OVERVIEW OF ANNA, A SPECIFICATION LANGUAGE FOR ADA** *IEEE SOFTWARE*
  Luckham, D. C., VONHENKE, F. W.
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- **ADAM - AN ADA-BASED LANGUAGE FOR MULTIPROCESSING** *SOFTWARE-PRACTICE & EXPERIENCE*
  Luckham, D. C., VONHENKE, F. W., Larsen, H. J., Stevenson, D. R.
  1984; 14 (7): 605-642

- **PROOF OF TERMINATION WITHIN A WEAK LOGIC OF PROGRAMS** *ACTA INFORMATICA*
  Luckham, D. C., Suzuki, N.
  1977; 8 (1): 21-36

- **EXTRACTING INFORMATION FROM RESOLUTION PROOF TREES** *ARTIFICIAL INTELLIGENCE*
  LUCKHAM, D., Nilsson, N. J.
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