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Jorge L. Díaz-Herrera (Ed.)

Software Engineering Education

7th SEI CSEE Conference
San Antonio, Texas, USA, January 1994
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Series Editors

Gerhard Goos
Universität Karlsruhe
Postfach 69 80
Vincenz-Priessnitz-Straße 1
D-76131 Karlsruhe, Germany

Juris Hartmanis
Cornell University
Department of Computer Science
4130 Upson Hall
Ithaca, NY 14853, USA

Volume Editor

Jorge L. Díaz-Herrera
Software Engineering Institute, Carnegie Mellon University
Pittsburgh, PA 15213-3890, USA

Carnegie Mellon University
Software Engineering Institute

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Preface

The seventh Conference on Software Engineering Education was held in San Antonio, Texas, on January 5-7, 1994. This annual conference is sponsored by the Educational Products Program of the Software Engineering Institute, a federally funded research and development center of the U.S. Department of Defense. For the last three years, it has also been held in conjunction with the Association for Computing Machinery and the IEEE Computer Society. The conference is a forum for discussion of software engineering education and training among members of the academic, industry, and government communities. The technical motivation behind the CSEE series has been putting the *engineering* into software engineering—applying the principles and methods of traditional engineering disciplines to software engineering—and the 7th CSEE continues this focus.

The quality of the accepted contributions is excellent. Out of 87 submissions, the program committee carefully selected 37 papers, 1 panel, and 4 tutorials for presentation. The program committee consisted of the following:

William W. Agresti, *MITRE*
Mark A. Ardis, *AT&T*
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William Richardson, *United States Air Force Academy*
Keith R. Pierce, *University of Minnesota, Duluth*
David C. Rine, *George Mason University*
Carol A. Sledge, *Software Engineering Institute*

In addition to the above people, the following were referees:

Jim Armitage, William Bail, Marilyn L. Bates, Daniel M. Berry, David Budgen, David W. Bustard, James E. Cardow, Neal S. Coulter, Joseph F. Delgado, Jorge L. Diaz, Merlin Dorfman, Henry A. Etlinger, Richard P. Evans, Eduardo B. Fernandez, Robert Firth, Frank L. Friedman, Norman E. Gibbs, Chris A. Gustafson, Anthony Hall, Daniel E. Hocking, James W. Hooper, Robert R. Korfhage, Leslie Lander, Jeffrey A. Laskey, Patricia K. Lawlis, Timothy J. Lulofs,

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As is usual with an undertaking of this size and scope, nothing would have been accomplished without an excellent support staff. The level of success is due to the efforts of Mary Ellen Rizzo, more than anyone else, for her tireless work in handling administrative matters, including tracking papers, referees, and final manuscripts. Bernadette Chorle and Jane DeSimone kept the budget and provided continuity. The expert advice and support of Helen Joyce, Wendy Rossi, and others in the Events group made it possible for this conference to run so smoothly. My sincere thanks to them, the program committee, the reviewers, and all who have contributed to the conference.

Pittsburgh, Pennsylvania
August 1993

Jorge L. Diaz-Herrera
Conference Chair, 7th CSEE

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Contents

Keynote Address:

Designing a Discipline of Software Design

Peter J. Denning
George Mason University
Department of Computer Science
Farifax, Virginia 22030-4444

Abstract. Software engineering is not a discipline. Its practitioners cannot systematically make and fulfill promises to deliver software systems judged by their customers as usable and dependable, on time and fairly priced. The illusion that software engineers possess a discipline has produced the major breakdown called the software crisis.

The central claim explored here is that the standard engineering design process produces a fundamental blindness to the domains of action in which the customers of software systems live and work. The connection between measurable properties of the software and the satisfaction of those customers is, at best, tenuous. We propose a broader interpretation of design that is centered on observing the work processes of a community of customers in a domain and connecting those processes to supportive software technologies. The skill that a designer needs to have to observe work processes and begin making the connections is here called ontological mapping. This skill can be learned and is the basis of a discipline of software design.

Session 1:
Undergraduate Software Engineering Education