

POLYTECHNIC UNIVERSITY, BROOKLYN, NEW YORK

CS 9164 – Application Security

Spring 2007

Instructor: Dr. Marco Pistoia

This new course aims at educating students in designing and implementing secure software applications. This course concentrates on writing software programs that make it difficult for intruders to exploit security holes. The course will have emphasis on writing secure distributed programs in Java, Standard Edition (Java SE), Java, Enterprise Edition (Java EE), JavaScript, and PHP. This course will explore the security ramifications of class, field, and method visibility, discuss secure coding guidelines, and explore important security concepts such as access control and information flow. Additionally, this course will teach how to use cryptographic services to make Web applications more robust against various types of attacks. At the end of the course, the students will have learned how to write and configure Web application securely.

Reading Material

- Mandatory:
 - Marco Pistoia, et al. [*Enterprise Java Security – Building Secure J2EE Applications*](#). ISBN 0321118898. Addison-Wesley. Reading, MA, February 2004.
- Optional:
 - Marco Pistoia, at al. [*Java 2 Network Security, Second Edition*](#). ISBN 0130155926. Prentice Hall PTR. Upper Saddle River, NJ, August 1999.

Additional material will be indicated by the instructor during the course.

About the Instructor



[Marco Pistoia](#), Ph.D. is a Research Staff Member in the Programming Languages and Software Engineering Department at the IBM Thomas J. Watson Research Center in Hawthorne, New York. He has written ten books, filed thirteen patents, and published numerous papers and journal articles on all areas of computer security and program analysis. Most recently, he has published his Ph.D. thesis, and has been the lead author of the books *Enterprise Java Security*, published by Addison-Wesley in 2004 (and now available in Chinese), and *Java 2 Network Security*, published by Prentice Hall PTR in 1999.

Dr. Pistoia has published and presented at several conferences and research institutions worldwide. He received his Ph.D. in Mathematics from Polytechnic University in May 2005 with a thesis entitled *A Unified Mathematical Model for Stack- and Role-Based Authorization Systems* (advisor: Prof. Robert J. Flynn), and his Master of Science and Bachelor of Science degrees in Mathematics *summa cum laude* from the University of Rome, Italy in 1995, with a research thesis entitled *Theory of Reductive Algebraic Groups and Their Representations*.