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<http://academic.research.microsoft.com/Author/3324211/eduardo-b-fernandez>

477 publications, 1988 citations

Research Gate 268 publications, 2536 citations

http://www.researchgate.net/profile/Eduardo_Fernandez8

http://dl.acm.org/author_page.cfm?id=81100383974

http://dblp.uni-trier.de/pers/hd/f/Fernandez:Eduardo_B=

<http://scholar.google.com/citations?hl=en&user=OAfHG7QAAAAJ>

9528 citations, 4499 since 2011

h-index 44 29 i10 index 217 115

Academic experience

- 1966-1973] Universidad de Chile, Department of Electrical Engineering, Associate Professor Electrical Engineering and Computer Science. Head of the Digital Systems and Control Laboratory. (On leave January 1970 - October 1972). Logic Design and Systems theory courses.
- [1967-1969] Universidad Catolica de Chile. Lecturer in Switching Theory. Advisor on several theses on digital systems. Logic Design course.
- [1973-75] University of California, Los Angeles, Department of Computer Science, Acting Assistant Professor. Data Structures course.
- [January-June 1981] Department of Computer Science, Yale University, Adjunct Professor. Database systems course.
- [August 1981-December 1983] University of Miami, Professor of Electrical and Computer Engineering
- [January 1984-present] Professor, Department of Computer Science and Engineering, Florida Atlantic University. Tenured May 1986. Associate Chairman 1985-88.

Active Courses

- Software Architecture and Patterns (CEN 6085)
- Introduction to Cloud Computing (COP5930)
- Dependable Infrastructure Systems (COT5930)
- Software Engineering (CEN5035) and (CEN4010)
- Computer Data Security (CIS6370)

- Intro to Data and Network Security (CNT4403)
- Distributed Systems Security (CIS6375)
- Intro. to the C Language

Taught in the past but inactive

- Security for Health/Medical Systems (COT5930)
- Distributed Object-oriented Systems (COP6930)
- Operating Systems (COP4610)
- Object-oriented Software Design (COP5330)
- Fault-tolerant systems

Professional experience

- [1963-65] Universidad de Chile, Depto. NASA, Maintenance engineer at Satellite Tracking Station of Colina
- [1970-1972] University of California, Los Angeles, Department of Computer Science. Postgraduate Research Engineer. Research on scheduling of parallel computations.
- [Jan. 1973-July 1981] Scientific staff member, IBM Corp., Los Angeles Scientific Center.

Education

- Ph.D. in Computer Science, University of California, Los Angeles, California, 1972.
- M.S. in Electrical Engineering, Purdue University, Lafayette, Indiana, 1963.
- Ingeniero Electricista (Electrical Engineer), Universidad F. Santa Maria, Valparaiso, Chile, 1960.
- Professional Engineer, State of Florida, April 1986.

PUBLICATIONS

Journal papers ISI or SCOPUS (47)

Anton Uzunov, E. B Fernandez, Katrina Falkner, “Security Solution Frames and Security Patterns for authorization in distributed, collaborative systems”, *Computers & Security*, 2015, doi: 10.1016/j.cose.2015.08.003 (ISI)

Anton Uzunov, E. B Fernandez, Katrina Falkner, “ASE: A Comprehensive Pattern-Driven Security Methodology for Distributed Systems”, *Journal of Computer Standards & Interfaces*, Volume 41, September 2015, Pages 112-137, <http://www.sciencedirect.com/science/article/pii/S0920548915000276> (SCOPUS)

E.B.Fernandez, Raul Monge, and Keiko Hashizume, “Building a security reference architecture for cloud systems”, *Requirements Engineering*. DOI: 10.1007/s00766-014-0218-7, 2015 (ISI)

A Uzunov, K. Falkner, and E.B.Fernandez , “A Comprehensive Pattern-Oriented Approach to Engineering Security Methodologies“, *Information and Software Technology*, vol. 57, 2015, 217-247. <http://dx.doi.org/10.1016/j.infsof.2014.09.001> (ISI)

Santiago Moral-García, Santiago Moral-Rubio, David G. Rosado, Eduardo B. Fernández and Eduardo Fernández-Medina, “Enterprise Security Pattern: A New Type of Security Pattern”, *Security and Communication Networks (Wiley)*, Volume 7, Issue 11, November 2014, Pages: 1670–1690, DOI: 10.1002/sec.863 (ISI)

S. Moral-Garcia, S. Moral-Rubio, E. B. Fernandez, and E. Fernandez-Medina "Enterprise Security Pattern: A Model-Driven Architecture Instance", *The Journal of Computer Standards & Interfaces* (Special Issue on Security in Information Systems), vol. 36, No 4, pp.748-758, 2014. <http://www.sciencedirect.com/science/article/pii/S0920548913001839> (SCOPUS).

A.V. Uzunov & E.B. Fernandez, "An extensible pattern-based library and taxonomy of security threats for distributed systems", *Computer Standards & Interfaces* (Special Issue on Security in Information Systems) , vol. 36, No 4, 2014, 734–747. (SCOPUS)
<http://dx.doi.org/10.1016/j.csi.2013.12.008>
<http://www.sciencedirect.com/science/article/pii/S0920548913001827>

Keiko Hashizume, David G. Rosado, Eduardo Fernández-Medina, Eduardo B. Fernandez “An Analysis of Security issues for Cloud Computing”, *Journal of Internet Services and Applications* 2013, 4:5 (27 February 2013) (SCOPUS)

E.B.Fernandez, O.Ajaj, I.Buckley, N.Delessy-Gassant, K.Hashizume, M.M.Larrondo-Petrie, “A Survey of Patterns for Web Services Security and Reliability Standards.” *Future Internet* 2012, 4, 430-450. <http://www.mdpi.com/1999-5903/4/2/430/> (SCOPUS)

E.B. Fernandez, David La Red Martinez, and J. I. Pelaez, "A conceptual approach to voting based on patterns", *Government Information Quarterly*. 30 (2013), 64-73 (Impact factor: 1.425.) (SCOPUS)

Anton V. Uzunov, E.B.Fernandez, and K. Falkner, “Engineering Security into Distributed Systems: A Survey of Methodologies”, *Journal of Universal Computer Science*, Vol. 18, No. 20, Dec. 2012, pp. 2920-3006. (ISI)
http://www.jucs.org/jucs_18_20/engineering_security_into_distributed

Anton Uzunov, E.B.Fernandez, and Katrina Falkner, "Securing Distributed Systems using Patterns: A Survey", *Computers & Security*, 2012 (ISI)
<http://dx.doi.org/10.1016/j.cose.2012.04.005>

D. L. La Red, J.I. Peláez, J.M. Doña, and E.B. Fernández, “WKC-OWA, a new neat-OWA operator to aggregate information in democratic decision problems”, *International*

Journal of Uncertainty, Fuzziness and Knowledge-Based Systems (IJUFKS). Volume No.19, No. 5. 2011, 759-779, DOI: [10.1142/S0218488511007222](https://doi.org/10.1142/S0218488511007222). (ISI)

M. VanHilst, E.B.Fernandez, and F. Braz, "A multidimensional classification for users of security patterns", *Journal of Research and Practice in Information Technology*, vol. 41, No 2, May 2009, 87-97 (ISI)

J. Pelaez, E.B.Fernandez, and M.M. Larrondo-Petrie, "Misuse patterns in VoIP", *Security and Communication Networks Journal*. Wiley, vol. 2, No 2, 635-653, published online: 15 Apr 2009 <http://www3.interscience.wiley.com/journal/122324463/abstract>
<http://onlinelibrary.wiley.com/doi/10.1002/sec.105/pdf> (ISI)

B. Wu, J. Wu, E.B.Fernandez, M. Ilyas, and S. Magliveras, "Secure and efficient key management in mobile ad hoc networks", *Journal of Network and Computer Applications*, vol. 30, 2007, 937-954. (ISI)

A.G.Delarue, S.M.Smith, P.E.An, and E.B.Fernandez, "Via GIS, Internet techniques AUV visualization, data processing", *Sea Technology*, May 2000, 10-14. (ISI)

E.B.Fernandez, J.Wu, and H.Qian, "A combined functional and object-oriented approach to software design", *Int. Journal of Computers and Applications*, vol. 22, No 2, 2000, 51-61. (ISI)

J.Wu, E.B.Fernandez, and Y.Q.Luo, "Embedding of binomial trees in hypercubes with link faults", *Journal of Parallel and Distr. Computing*, vol. 54, 1998, 59-74. (ISI)

J.Wu, E.B.Fernandez, and D.Dai, "Optimal fault-secure scheduling", *The Computer Journal*, vol. 41, No 4, 1998, 207-222. (ISI)

J. Wu, E. B. Fernandez, and M. Zhang, "Design and modeling of hybrid fault-tolerant software with cost constraints", *Journal of Systems and Software* 33,(2), November 1996, 141-149.

E. B. Fernandez, E. Gudes, and H. Song, "A model for evaluation and administration of security in object-oriented databases", *IEEE Trans. on Knowledge and Database Eng.*, vol. 6, no. 2, April 1994, 275--292.

J. Wu, Y. Wang, and E. B. Fernandez, "A uniform approach to software and hardware fault tolerance", *Journal of Systems and Software*, vol. 26, no. 2, August 1994.

J. Wu and E. B. Fernandez, "Using Petri nets for the design of conversation boundaries in fault-tolerant software", *IEEE Trans. on Parallel and Distr. Sys.*, vol. 5, no. 10, October 1994, 1106--1113.

J. Wu and E. B. Fernandez, "Fault-Tolerant Distributed Broadcast Algorithm for Cube-Connected-Cycles", *Computer Systems and Engineering*, 8(4), October 1993, 224--233.

J. Wu and E. B. Fernandez, "Broadcasting in faulty hypercubes", *Microprocessing and Microprogramming - The Euromicro Journal*, 39, 1993, 43--53.

J. Wu and E. B. Fernandez, "Fault-tolerant distributed broadcast algorithm for cube-connected cycles", *COMPUTER SYSTEMS SCIENCE AND ENGINEERING* Volume: 8 Issue: 4 Pages: 224-233 Published: OCT 1993

K. D. Huynh, E. B. Fernandez, and T. M. Khoshgoftaar, "A workload model for frame-based real-time applications on distributed systems", *Journal of Systems and Software*, 18, (1992), 255--271.

J. Wu, E. B. Fernandez and R. Zhang, "Some Extensions to the Lattice Model in Multi-level Computer Security," *Computers and Security*, **11** (1992), 357--369.

J. Wu and E. B. Fernandez, "A Comparison Connection Assignment Under a Two-Fault Assumption," *Computer System Science and Engineering*, **7**, 3 (July 1992), 199--201. .

S. Leu, E. B. Fernandez, and T. Khoshgoftaar, "Fault-tolerant Software Reliability Modeling Using Petri Nets," *Microelectronics and Reliability*, vol. **31**, No. 4, 1991, 645--665.

M. Ancona, A. Clematis, G. Doderio, E. B. Fernandez, and V. Gianuzzi, "A System Architecture for Fault Tolerance in Concurrent Systems," *IEEE Computer*, Vol.23, No. 10, October 1990, 23-32.

T. Lunt and E. B. Fernandez, "Database Security," *ACM SIGMOD Record*, 19, 4 (Dec. 1990), 90-97; and *IEEE Data Engineering Bulletin*, 1990.

J. Wu and E. B. Fernandez, "A Simplification of a Conversation Design Scheme Using Petri Nets," *IEEE Transactions on Software Engineering*, Vol. 15, No. 5, May 1989, 658-660.

B. M. Ozaki, E. B. Fernandez, and E. Gudes, "Software Fault Tolerance in Architectures with Hierarchical Protection Levels," *IEEE MICRO*, Vol. 8, No. 4, August 1988, 30-43.

M. Ancona, A. Clematis, G. Doderio, E. B. Fernandez, and V. Gianuzzi, "Using different language levels for implementing fault tolerant programs," *Microprocessing and Microprogramming*, Vol. 20 (1987), 33-38.

C. Wood, E. B. Fernandez and T. Lang, "Minimization of Demand Paging for the LRU Stack Model of Program Behavior," *Information Processing Letters*, Vol. 16, No. 2, pp. 99-104, 26 February 1983.

C. Wood, E. B. Fernandez, and R. Summers, "Database Security: Requirements, Policies and Models," *IBM Systems Journal*, Vol. 19, No. 2, pp. 229-252, 1980. Also published in *Advances in Computer System Security*, (R. Turner, Ed.), Artech House, 1981.

C. Wood, R. Summers, and E. B. Fernandez, "Authorization in Multilevel Database Models," *Information Systems*, Vol 4, pp. 155-161, 1979.

E. B. Fernandez, T. Lang and C. Wood, "The Effect of Main Memory Replacement Algorithms on the Performance of a Paged Buffer Database System," *IBM Journal of Research and Development*, Vol. 22, No. 2, pp. 185-196, March 1978.

E. B. Fernandez, R. Summers, T. Lang and C. Coleman, "Architectural Support for System Protection and Database Security," *IEEE Trans. on Computers*, Vol. C-27, No. 8, pp. 767-771, August 1978.

T. Lang and E. B. Fernandez, "Improving the Computation of Lower Bounds for Optimal Schedules," *IBM Journal of Research and Development*, Vol. 21, No. 3, pp. 273-280, May 1977.

T. Lang, C. Wood, and E. B. Fernandez, "Database Buffer Paging in Virtual Storage Systems," *ACM Trans. on Database Systems*, Vol. 2, No. 4, pp. 339-351, December 1977.

T. Lang and E. B. Fernandez, "Scheduling of Unit-length Independent Tasks with Execution Constraints," *Information Processing Letters*, Vol. 4, No. 4, pp. 95-98, January 1976.

E. B. Fernandez and T. Lang, "Scheduling as a Graph Transformation," *IBM Journal of Research and Development*, Vol. 20, pp. 551-559, November 1976.

E. B. Fernandez and T. Lang, "Computation of Lower Bounds for Multiprocessor Schedules," *IBM J. of Research and Dev.*, Vol. 19, No. 5, pp. 435-444, September 1975.

E. B. Fernandez and B. Bussell, "Bounds on the Number of Processors and Time for Multiprocessor Optimal Schedules," *IEEE Transactions on Computers*, Vol. C-22, pp. 745-751, August 1973. Also reprinted in *Distributed System Design*, M. P. Mariani and D. F. Palmer (editors), IEEE Tutorial, 1979.

Books

E.B.Fernandez, "Security patterns in practice: Building secure architectures using software patterns". Wiley Series on Software Design Patterns. 2013

M. Schumacher, E. B.Fernandez, D. Hybertson, F. Buschmann, and P. Sommerlad, *Security Patterns: Integrating security and systems engineering*, Wiley 2006. Wiley Series on Software Design Patterns.

J. Juerjens, B. Rumpe, R. France, and E. B. Fernandez (Eds.), *Critical systems development with UML, Procs. of the UML '03 Workshop*, Technical University of Munich, Sept. 2003.

R. Shankar and E.B.Fernandez, *VLSI and Computer Architecture*, Academic Press, 1989.

E. B. Fernandez and T. Lang, *Software -Oriented Computer Architecture* IEEE Computer Society, July 1986

E. B. Fernandez, R. C. Summers, C. Wood, *Database Security and Integrity*, Addison-Wesley, Reading, Massachusetts, Systems Programming Series, February 1981, 320 pp., Japanese translation, 1982.

E. B. Fernandez, "Activity Transformations on Graph Models of Parallel Computation," UCLA Technical Report UCLA-ENG-2671, October 1972 (Ph.D. Dissertation)

E. B. Fernandez, "Analysis of Electric Networks with Digital Computers by Means of Topological Formulas," Departamento de Electricidad, Universidad de Chile, December 1969 (In Spanish). Thesis.

Journal papers non-ISI nor SCOPUS (15)

E.B.Fernandez and Sergio Mujica, "Model-based development of security requirements", *CLEI (Latin-American Center for Informatics Studies) Journal*. Vol. 14, No 3, paper 2, December 2011 Special issue of best papers presented at SCCC 2010, Antofagasta, Chile

Anthony Marcus, Mihaela Cardei, Ionut Cardei, E.B.Fernandez, Fulvio Frati, and Ernesto Damiani, "A pattern for web-based WSN monitoring", *Journal of Communications*, Vol 6, No 5, pp. 393-399, Aug 2011.
<http://ojs.academypublisher.com/index.php/jcm/issue/view/289>, Special Issue on New Advances in Wireless Sensor Networks, doi:10.4304/jcm.6.5.393-399

Xiaohong Yuan and E. B. Fernandez, "Patterns for Business-to-Consumer E-Commerce Applications", *International Journal of Software Engineering & Applications (IJSEA)*, vol. 2 No 3, July 2011, 1-20, <http://airccse.org/journal/ijsea/papers/0711ijsea01.pdf>

Juan C. Pelaez and Eduardo B. Fernandez, "Network Forensics Models for Converged Architectures", *Int. Journal on Advances in Security*, IARIA, 2010, vol. 3 No 1 & 2, 2010. <http://www.iariajournals.org/security/tocv3n12.html>

E.B.Fernandez and Xiaohong Yuan, "Semantic analysis patterns and secure semantic analysis patterns", *Int. Journal of Information and Computer Security (IJICS)*. Inderscience Publishers. 2011

A. Agarwal and E.B. Fernandez, "System Level Power Management for Embedded RTOS: an Object-Oriented Approach", *International Journal of Engineering (IJE)* , Vol. 3, No 5, 2010

E.B. Fernandez, J.C. Pelaez, and M.M. Larrondo-Petrie, "Security patterns for voice over IP networks", *Journal of Software*, Vol. 2, No 2, August 2007, 19-29
(<http://www.academypublisher.com/jsw>)

K. D. Huynh, E. B. Fernandez, and T. M. Khoshgoftaar, "Defining and measuring task-to-task dispatch and interrupt response times on real-time systems", *International Journal of Mini and Micro Computers*, 15(3), 1993, 122--130.

M. M. Larrondo Petrie, N. S. Coulter, and E. B. Fernandez, "Factors affecting the Complexity of Parallel Programming," *International Journal of Mini and Microcomputers*, Vol. 12, No. 3, 1990, 79-84.

E. B. Fernandez, T. A. Ngo, "Scheduling of Task Graphs into Transputer Networks," *Congressus Numerantium*, Vol. 59, 1987, 79-88.

E. B. Fernandez, "Arquitectura de Computadoras Orientadas a Objetos (Object-oriented Computer Architectures)," *Novatica*, (Journal of the Spanish Informatics Association, Barcelona), Vol. X, No. 57/58, July 1984, pp. 32-36. Spain (Invited paper).

E. B. Fernandez, "Microprocessor Architecture: The 32-bit Generation," *VLSI Systems Design*, October 1985, 34-44 (Invited paper).

R. Summers, E. B. Fernandez and C. Wood, "Auditing and Controls in Database Systems," *Computer Security Journal*, Vol. 1, No. 1, pp. 99-121, Spring 1981 (Invited paper).

Book chapters (refereed)

Keiko Hashizume, Nobukazu Yoshioka, and Eduardo B. Fernandez, "Security Concerns in Cloud Computing", chapter in *Security Engineering for Cloud Computing: Approaches and Tools* , edited by David Garcia Rosado and Eduardo Fernandez-Medina, to be published by IGI Global. 2012

M. VanHilst and E.B. Fernandez, "A Construct Grid Approach to Security Classification and Analysis", chapter in *Strategic and Practical Approaches for Information Security Governance: Technologies and Applied Solutions*, Manish Gupta, John Walp, and Raj Sharman (Eds.), IGI Global 2011.

E.B. Fernandez, N. Yoshioka, H. Washizaki, J. Jurjens, M. VanHilst , and G. Pernul, "Using security patterns to develop secure systems", in H. Mouratidis, Ed., *Software engineering for secure systems: Industrial and Research Perspectives*, IGI Global Group, 2010

E. B. Fernandez, K. Hashizume, I. Buckley, M. M. Larrondo-Petrie, and M. VanHilst, "Web services security: Standards and products", Chapter 8 in *"Web Services Security Development and Architecture: Theoretical and Practical Issues"*, Carlos A. Gutierrez, Eduardo Fernandez-Medina, and Mario Piattini (Eds.), IGI Global Group 2010. 152-177.

E. B. Fernandez, M.M. Larrondo-Petrie, T. Sorgente, and M. VanHilst, "A methodology to develop secure systems using patterns", Chapter 5 in *"Integrating security and software engineering: Advances and future vision"*, H. Mouratidis and P. Giorgini (Eds.), IDEA Press, 2006, 107-126. (ISI BCI)

E.B.Fernandez, J. Wu, and D. Hancock, "A design method for real-time object-oriented systems using Communicating Real-Time State Machines", Chapter 11 in *"Successful Software Reengineering"*, S. Valenti (Ed.), IRM Press, 2002, 171-185.

E.B.Fernandez, "Web services security", chapter in *Web Services Business Strategies and Architectures*, P. Fletcher and M. Waterhouse (Eds.), Expert Press, UK, 2002, 290-302.

E.B.Fernandez, "Building complex object-oriented systems with patterns and XP", Chapter 47 in *"Extreme Programming Perspectives"*, M. Marchesi, G. Succi, D. Wells, and L. Williams, (Eds.), Addison-Wesley, 2003, pp. 591-600.

J. Wu, and E. B. Fernandez, "The extended G network, a fault tolerant interconnection network for multiprocessors", in *Parallel Architectures*, N. Rische, S. Navathe, and D. Tal (Eds.) IEEE Computer Society Press, 1990, pp. 250--259.

M. M. Larrondo-Petrie, E. Gudes, H. Song, E. B. Fernandez, "Security Policies in Object-Oriented Databases," in *Database Security III*, North-Holland 1990, 257-268. (E. Gudes, H. Song, and E. B. Fernandez, "Evaluation of negative and predicate based authorization in object-oriented databases", in *Database Security IV*, North Holland, 1991, 85--98.

E. B. Fernandez, M. M. Larrondo-Petrie, and E. Gudes, "A method-based authorization model for object-oriented databases", in *Security for Object-Oriented Systems*, book of Springer Verlag, London, 1994.

E. B. Fernandez, "Formal specifications for real-time fault-tolerant systems", in *Real Time Computing*, W. A. Halang and A. D. Stoyenko (Eds.), NATO ASI Series, vol. 127, 1994, 687--688.

M.Ancona, W.Cazzola, and E.B.Fernandez, "Reflective authorization systems: Possibilities, benefits, and drawbacks", in J. Vitek and C. Jensen (Eds.), Springer Verlag, Lecture Notes in Computer Science No 1603, 1999, 35-49.

Book chapters (by invitation)

E.B.Fernandez, "Security in Data Intensive Computing Systems", chapter 16 in Handbook of Data Intensive Computing, B. Furht and A. Escalante (Eds.) , Dec. 2011, 447-466.

E. B. Fernandez, "Wireless network security for health applications", Chapter 15 in the "Pervasive Communication Handbook", M. Ilyas (Ed.), CRC Press, 2011.

E. B. Fernandez, Carolina Marin, and Maria M. Larrondo Petrie, "Security requirements for social networks in Web 2.0", in the *Handbook of Social Networks: Technologies and Applications*, B. Furht (Editor), Springer 2010.

<http://www.springer.com/computer/swe/book/978-1-4419-7141-8>

E.B.Fernandez, "Security patterns and a methodology to apply them", in *Security and Dependability for Ambient Intelligence*, G. Spanoudakis and A. Maña (Eds.), Springer Verlag, 2009 .

J. Jurjens and E.B.Fernandez, "Secure database development", in *Encyclopedia of Database Systems*, Ling Liu and Tamer Oszu (eds.), Springer Verlag, Berlin, Germany, 2009.

E. B. Fernandez and M. VanHilst, "An overview of WiMax security", Chapter 10 in the "*Handbook of WiMax security and QoS*", S. Ahson and M. Ilyas (Eds.), CRC Press, Taylor and Francis Group, Boca Raton, FL, 2008, 197-204.

E. B. Fernandez and M. M. Larrondo Petrie, "Securing design patterns for distributed systems", Chapter 3 in "*Security in Distributed, Grid, and Pervasive Computing*", Y. Xiao (Ed.), Auerbach Pubs., Taylor & Francis Group, LLC, 2007, 53-66.

R.Z. Xue and E.B.Fernandez, "Accessing legacy databases from the web using CORBA", Chapter 13 in *Handbook of Internet Computing* , B. Furht (Ed.), CRC Press, Boca Raton, FL, 2000.

E. B. Fernandez, "VLSI and Single-Chip Software-Oriented Computer Architecture," Chapter 9 in *VLSI Electronics -Microstructure Science* , Edited by N. Einspruch, Academic Press, 1985, pp. 337-365.

Conference papers (indicating acceptance rates if known)

2016

Madiha H. Syed and E.B.Fernandez, "Cloud ecosystems support for Internet of Things and DevOps using patterns", *First International Workshop on Interoperability, Integration, and Interconnection of Internet of Things Systems (I4T)*, part of the IEEE Int. Conf. on Cloud Engineering (IC2E), Berlin, Germany, April 4-8, 2016.

Madiha H. Syed, E.B.Fernandez, M.Ilyas, “A pattern for fog computing”, *Pattern Languages of programming (VikingPLoP 2016)*, 7th-10th April 2016, Leerdam, Netherlands

Dereje Yimam and Eduardo B. Fernandez, “Building Compliance and Security Reference Architectures for cloud systems”, *IEEE Int. Conf. On Cloud Engineering (IC2E) 2016*, Berlin, April 4-8, 2016.

Paulina Silva, Raul Monge, E.B.Fernandez, “A Pattern for Web Browser Infrastructure”, *5th Asian Conference on Pattern Languages of Programs” (AsianPLoP 2016)*.

Paulina Silva, Raul Monge, E.B.Fernandez, “A Misuse Pattern for the Web Browser: Interception of traffic”, *5th Asian Conference on Pattern Languages of Programs” (AsianPLoP 2016)*.

E.B.Fernandez, H. Yashizaki, N. Yoshioka, “Patterns for Secure Cloud IaaS”, *5th Asian Conference on Pattern Languages of Programs” (AsianPLoP 2016)*.

E.B. Fernandez, “Preventing and unifying threats in cyberphysical systems”, *17th IEEE High Assurance Systems Engineering Symposium (HASE)*, Orlando, Jan. 7-9, 2016.

2015

Madiha H. Syed and Eduardo B. Fernandez, “The Software Container pattern”, *22nd Conference on Pattern Languages of Programs 2015*, Pittsburgh, PA, October 24-26, 2015

Rohini Sulatycki and Eduardo B. Fernandez, “A threat pattern for the “Cross-Site Scripting (XSS)” attack”, *22nd Conference on Pattern Languages of Programs 2015*, Pittsburgh, PA, October 24-26, 2015

Y. Ito, H. Washizaki, M. Yoshizawa, Y. Fukazawa, T. Okubo, H. Kaiya, H. Haseyama, N. Yoshioka, E.B. Fernandez, “Systematic Mapping of Security Patterns Research”, *22nd Conference on Pattern Languages of Programs 2015*, Pittsburgh, PA, October 24-26, 2015

E.B.Fernandez, H. Astudillo, and G. Pedraza-Garcia, “Revisiting architectural tactics for security”, *9th European Conf. on Software Architecture (ECSA 2015)*, September 5-7, 2015.

E.B. Fernandez, N. Yoshioka, and H. Washizaki, “Patterns for Security and Privacy in Cloud Ecosystems”, *Procs. 2nd. Int. Workshop on Evolving Security and Privacy Requirements Engineering (ESPRE 2015)*, 13-18. Track of the *23rd IEEE Int. Requirements Eng. Conf.*, August 24-28, Ottawa, Canada.

E.B. Fernandez and D. Yimam, “Towards Compliant Reference Architectures by Finding Analogies and Overlaps in Compliance Regulations”, *12th Int. Conf. on Security and*

Cryptography (SECRYPT 2015)

E. Fernandez and Brahim Hamid, “A pattern for Network Functions Virtualization”, *21st European Conf. on Pattern Languages of Programs (EuroPLoP 2015)*

Rohini Sulaticky and E.B.Fernandez, “Two threat patterns that exploit Security misconfiguration and Sensitive data exposure vulnerabilities”, *21st European Conf. on Pattern Languages of Programs (EuroPLoP 2015)*

E.B. Fernandez, Nobukazu Yoshioka, Hironori Washizaki, “Cloud Access Security Broker (CASB): A pattern for accessing secure cloud services”, *Procs. of 4th AsianPLoP (Pattern Languages of Programs) 2015*, Tokyo, Japan, March 2015.

Rohini Sulatycki and E.B. Fernandez, “Two threat patterns: “Compromising applications using components with known vulnerabilities” and “Direct access to objects using uncontrolled references”, *Procs. of 4th AsianPLoP (Pattern Languages of Programs) 2015*, Tokyo, Japan, March 2015.

2014

E.B.Fernandez, H. Astudillo, and G. Pedraza-Garcia, “Revisiting architectural tactics for security”, *Procs. of LACCEI 2014*

E.B.Fernandez and Sergio Mujica, “From domain models to secure and compliant applications”, *Procs. of LACCEI 2014*

E. B.Fernandez, Nobukazu Yoshioka, Hironori Washizaki, and Joseph Yoder, "Abstract security patterns for requirements specification and analysis of secure systems", *Procs. of the WER 2014 conference, a track of the 17th Ibero-American Conf. on Soft. Eng.(CIbSE 2014)*, Pucon, Chile, April 2014

René Noël, Gilberto Pedraza-García Hernán Astudillo, E. B.Fernández,, “An Exploratory Comparison of Security Patterns and Tactics to Harden Systems”, *Procs. of the ESELAW 2014 conference, a track of the 17th Ibero-American Conf. on Soft. Eng.(CIbSE 2014)*

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E. B. Fernandez and C. Wood, ``The Relationship Between Operating System and Database System Security: a Survey," *Proceedings of the IEEE Computer Software Applications Conference (COMPSAC)*, November 1977, 453-562.

T. Lang, E. Nahouraii, K. Kasuga and E. B. Fernandez, ``An Architectural Extension for a Large Database System Incorporating a Processor for Disk Search," *Proceedings of the 3rd International Conference on Very Large Data Bases*, Tokyo, Japan, pp. 204-210, October 1977.

T. Lang, E. B. Fernandez and R. Summers, ``A System Architecture for Compile-time Actions in Databases," *Proceedings of the ACM 1977 Annual Conference*, pp. 453-462, October 1977.

E. B. Fernandez and R. C. Summers, ``Integrity Aspects of a Shared Database," *AFIPS Conference Proceedings*, Vol. 45, pp. 819-827, NCC 1976.

1969-75

R. C. Summers, E. B. Fernandez and C. D. Coleman, ``Shared Data Access Control with Programming Language Support," *Proceedings of the 8th Hawaii International Conference on System Science*, Honolulu, January, 1975, pp. 187-190.

E. B. Fernandez, R. C. Summers, and C. B. Coleman, ``An Authorization Model for a Shared Data Base," *Proceedings of the 1974 SIGMOD International Conference*, ACM, New York, pp. 23-31, 1975.

R. C. Summers, C. D. Coleman, and E. B. Fernandez, ``A programming Language Extension for Access to a Shared Data Base," *Proceedings of the 1975 ACM Pacific Conference*, pp. 114-118, 1975.

E. B. Fernandez, R. C. Summers and T. Lang, ``Definition and Evaluation of Access Rules in Data Management Systems," *Proceedings 1st International Conference on Very Large Databases*, Boston, 1975, 268-285.

B. Bussell, E. B. Fernandez, H. C. Levy, ``Optimal Scheduling for Homogeneous Multi-processors," *Information Processing* 74, Vol, 2, 286-290, North Holland 1974.

E. B. Fernandez, ``Restructuring of Graph Models of Computations," *Proceedings of the International Conference on Networks, Systems, and Computers* , Oaxtepec, Mexico, pp. 664-668, 1971.

E. B. Fernandez, ``Restructuring and Scheduling of Parallel Computations," *Conference Record of the 5th Asilomar conference on Circuits and Systems*, pp. 472-479, November 1971.

H. Arango, C.Holzmann, E. B. Fernandez and S. Padin, ``On the Set of Trees of an Inter-connection of Graphs," *Proceedings of the International Symposium on Circuit and System Theory*, Kyoto, Japan, 1970.

E. B. Fernandez, ``An Evaluation of Tree Generation Methods," *Proceedings of the 12th IEEE Midwest Symposium on Circuit Theory* , Austin, Texas, April 1969.

Tutorial notes

E.B.Fernandez, "Security patterns and secure systems design using UML", 307 slides. Given at ISSADS, Guadalajara, MX., Jan. 2006, WCC Chile August 2006, IEEE WICSA 2008,FAMAF, Cordoba (Argentina) 2008, ACM OOPSLA 2008 and 2009. IEEE WICSA 2014, Huawei 2014.

E.B.Fernandez, " Internet and web services (distributed systems) security", Tutorial notes (387 slides). Given at INFORMS 98, COMPSAC'98, IFIP'98, BOCA2000 (Fifth INFORMS Telecomm. Conf.), March 5-8,2000, Boca Raton, FL, SANS2000, March 25, 2000, Orlando, FL, Software Development East 2000, West 2001, and East 2001, Escuela de Ciencias Informaticas, Buenos Aires, July 2003, Univ. Tec. F. Santa Maria, Valparaiso, Chile, ISSADS, Guadalajara, MX.Jan. 2005, Pilar, Paraguay, May 2006, Ciudad del Este, Paraguay, May 2007, Aguascalientes, MX, 2009.

E.B.Fernandez, "Object-oriented design of complex systems" (120 slides). Given at IEEE Int. Conf. on the Eng. of Complex Comp. Systems, Como, Italy, 1997 and at Hawaii Int. Conf. on Systems Science, 1998.

E.B.Fernandez, "Semantic Analysis patterns" (83 slides). Given at SD'98and 99, 18th Int. Conf. of the Chilean Computer Society, Antofagasta, Chile, 1998, and OOPSLA99(Denver, October 1999).

E.B.Fernandez and J. Jurjens, "A holistic view of secure systems: Using patterns and UML", 2002

Published reviews (incomplete)

- E. B. Fernandez, Review of "Real-time software techniques" by W. S. Heath, *ACM Computing Reviews*, **32**, 8 (August 1991), 400.
- E. B. Fernandez, Review of "Fault tolerance in commercial computers" by D. P. Sie-wiorek, *ACM Computing Reviews*, June 1991, 311.
- E. B. Fernandez, Review of "Reliability modeling: an overview for systems designers" by A. L. Reibman and M. Veeraraghavan, *ACM Computing Reviews*, **33**, 5 (May 1992), Review No. 9205-0296, 256.
- E. B. Fernandez, Review of "Building flexible real-time systems using the Flex lan-guage", by K. Kenny and K. J. Lin, *ACM Computing Reviews*, **33**, 7 (July 1992), Review No. 9207-0491.
- E. B. Fernandez, Review of R. Sites' "Alpha architecture manual", *ACM Comp. Re-views*, Review No 9306-0349, June 1993, p. 282.
- Review of W. Kim's "Modern database systems", *ACM Computing Reviews*, Septem-ber 1995.
- Review of "Using CRC cards: an informal approach to object-oriented development", by N. Wilkinson, *ACM Comp. Reviews*, December 1995.
- Review of "Network and Internet Security", by V. Ahuja, *ACM Comp. Reviews*, 1996.
- E. B. Fernandez, Review of R. Sessions: Object persistence : beyond object-oriented da-tabases ", *ACM Computer Surveys*, Review 22422, June 1997.
- E. B. Fernandez, Review of P. Krieff : "Prototyping with objects ", *ACM Computer Sur-veys*, Review 23399, September 1997.
- E. B. Fernandez, Review of S. H. Edwards : "Representation inheritance : a safe form of "white box" inheritance", *ACM Computer Surveys*, Review 24597, December 1997.
- E. B. Fernandez, Review of M. Gonsalves "Protecting your web site with firewalls", Prentice-Hall 1997, *ACM Computing Reviews*, April 1998.
- E. B. Fernandez, Review of C. Drake "Object-oriented programming with C++ and Smalltalk", Prentice-Hall 1998, *ACM Computing Reviews*, September 1998.
- E. B. Fernandez, "Object-oriented design--Review of four UML books", *Dr. Dobbs Journal*, December 1998, 135 and 137. Also in <http://www.ercb.com/ddj/1998/ddj.9812.html>
- E. B. Fernandez, Review of G. Avrunin et al., "Analyzing partially- implemented real-time systems", *ACM Computing Reviews*, March 1999.
- E. B. Fernandez, Review of three UML books, Dr. Dobbs J., <http://www.ercb.com/brief/brief.0097.html>
- E. B. Fernandez, Review of I. Jacobson et al., "The Unified Software Development process", *Dr. Dobbs J.*, <http://www.ercb.com/brief/brief.0142.html>
- E. B. Fernandez, Review of E. Bertino et al., "An access control model supporting peri-odicity constraints and temporal reasoning", *ACM Computing Reviews*, June 1999.
- E. B. Fernandez, Review of E. Bertino et al., "A flexible authorization mechanism for relational databases", *ACM Computing Reviews*, September 1999.
- E. B. Fernandez, Review of M. S. Olivier, "Towards a configurable security architec-ture", *Data & Knowledge Engineering*, Vol. 38, No. 2 (2001), pages 121-145. In *ACM Computing Reviews*
- http://www.computingreviews.com/review/review_review.cfm?review_id=142221

Nonrefereed publications (not published in another form)

E.B.Fernandez and M. Da Re, "The IBM Series/1 EDX Operating System", FAU Report, February 1986.

E.B. Fernandez, M. Da Re, and S. Rao, "The architecture of the IBM Series/1 Computers", FAU Report, May 1986.

S.Scharf and E.B.Fernandez , "Object-oriented analysis and design of a serial peripheral interface monitor for radios and pagers ", Report TR-CSE- 97-9 , Dept. of CSE , FAU, February 1997.

Y.-L. Chang and E.B.Fernandez , "Applying a PAC framework to a radio display", Report TR-CSE-97-17, Dept. of CSE, FAU, March 1997.

Z.-W.Peng and E.B.Fernandez, "Object-oriented modeling of inventory- control systems ", Report TR-CSE-97-19, Dept. of CSE, FAU, March 1997.

M.M.Anwar and E.B.Fernandez, "Deriving Operations Concept model and activity diagrams in object-oriented analysis", Report TR-CSE-97-25 , Dept. of CSE, FAU, March 1997.

M.M.Anwar and E.B.Fernandez, "An integrated state diagram for object- oriented dynamic models", Report TR-CSE-97-26, Dept. of CSE, FAU, March 1997.

E.B.Fernandez and Z.-W. Peng, "An object-oriented model for a manufacturing inventory control system", Report TR-CSE-97-30, Dept. of CSE, FAU, April 1997.

E.B.Fernandez , "Migration strategies for information systems ", Report TR-CSE-97-37, Dept. of CSE, FAU, April 1997.

M.Lynch ,E.B.Fernandez ,and C.S.Lee, "The development of an object- oriented prototype for a manufacturing inventory system ", Report TR-CSE- 97-38, April 1997.

D.Walls and E.B.Fernandez, "A critical comparison of the MVC and MVC++ architectures for user interface design ", Report TR-CSE-97-45, Dept. of CSE, FAU, May 1997.

J.C.Hawkins and E.B.Fernandez, "Extending use cases and interaction diagrams to develop distributed system architecture requirements", Report TR-CSE-97-47, Dept. of CSE, FAU, 1997

E.B.Fernandez, "Good analysis as the basis for good object-oriented design and implementation", Rept. TR-CSE-99-12, FAU , February 1999.

E.B.Fernandez and R.Z. Xue, "A pattern for a secure architecture to access databases from the web using CORBA", TR-CSE-99-40, December 1999.

L. Perez, L. Cardoso, and E.B.Fernandez, "Critical Security Improvements of Windows 2000 over Windows NT 4.0 ", TR-CSE-00-03, January 2000

E.B.Fernandez and Z. Peng, "UML Models for Manufacturing Inventory Control Systems", TR-CSE-00-07, February 2000

E.B. Fernandez, "Metadata and Authorization Patterns", TR-CSE-00-16 , May 2000.

Reviews

Reviewer for many conferences: See below in Program Committees

Reviewer for many journals: IEEE Transactions on Computers, IEEE Computer, IEEE Software, ACM Transactions on Database Systems, ACM Computer Reviews, IBM Systems Journal, IEEE Transactions on Software Engineering, Operations Research, International Journal of Computer Applications, Journal of Parallel and Distributed Computing, IEEE Trans. on Distributed and Parallel Systems, IEEE Transaction on Knowledge and Database Systems, SoSym, Int. J. of E-Business Research., Information Systems and e-Business Management, Advances in Engineering Software, Computing, J. of Systems and Software

Reviewer of books for Macmillan and Co., MIT Press, Allyn and Bacon, Brady Books, SRA, Richard D. Irwin Inc., CRC, Wiley, Prentice-Hall, McGraw Hill, Addison-Wesley, Scott Jones, Kluwer.

Reviewer of grant proposals and faculty promotion

NSF, USA (2002 to 2011)

National Research Councils of Austria, South Africa, and Chile.

Innovation and Technology Commission of Hong Kong, January and June 2003.

Technology Foundation of Holland, March 2003.

Evaluation of researchers for the South African Research Commission, July 2003, June 2007.

Evaluation of Prof. Indrakshi Ray, Colorado State University, 2007

Evaluation of Prof. Ehud Gudes for promotion at Ben-Gurion University, Israel, 2008.

Evaluation of Prof. Yuval Elovici for promotion at Ben-Gurion University, Israel, 2010.

Presentations (incomplete)

Talks and seminars presented at University of Notre Dame, UCLA, Politecnico di Torino (1985), University of Genoa, Italy (1985, 1987, and 1988), Politecnico di Milano (1972 and 1985) and University of Pisa (Italy), USC-ISI, Brown University, Stanford University, Georgia Tech, University of Kansas, Bell Telephone Labs, IBM Corporation (Los Angeles Scientific Center), Oregon Graduate Center, Northeastern University, Pennsylvania State University, Portland State University (Portland, Oregon), University of Chile (Santiago), Southern Methodist University (Dallas, Texas), Yale University, IEEE Workshops in Buenos Aires, Argentina (1986), Seattle (1971), and Chicago (1977), Academia Sinica (Taipei, Taiwan), University of the Philippines, IBM Japan, IBM Tokyo Scientific Center, Wang Institute (Lowell, Massachusetts), V. Chilean Conference on Electrical Engineering (Valparaiso, Chile, 1983), Universidad Politecnica de Barcelona (Spain, June 1985), IEEE Miami (April 1985), IEEE Palm Beach (November 1985), University of Science and Technology of Shanghai (1986, 1988, and 1991), Yanshan University (1986 and 1988), and Chinese Academy of Sciences (1986), People's Republic of China, University of Dortmund, Germany (1987 and 1990), Ben-Gurion University, Israel (1988), University of Kaiserslautern, Germany (1990), University of Hildesheim, Germany (1990), Imperial College (London), University of York, University of Newcastle, UK (1990), Tianjin University, China (1991), Beijing University of Posts and Telecommunications, China (1991 and 2002), Universidad Politecnica de Barcelona, Spain; Universidad Autonoma de Barcelona; Universidad Politecnica de Madrid, Universidad de Zaragoza, Spain (1992); University of Nice, France (1992); Laboratory for Automation & Analysis of Systems (LAAS), Toulouse, France (1992), IIT (Delhi), India (1993), University of Stellenbosch and Rand University, S. Africa (1995), Universities of Frankfurt and Essen, Germany (1996). University of Genoa, Italy (1997). Georgia Institute of Technology (1997), Catholic University of Chile, Santiago (1999), Northeast University, Shenyang, China (2002), Qinghua University, Beijing, China (2002), Jiaotong University, Shanghai, China (2002), Nanjing University, China (2002), Technical University of Munich, Germany (July 2002 and July 2003), University of Regensburg, Germany (July 2003), University of Buenos Aires, Argentina, (July 1998 and July 2003), W. Chester University, PA (2004), Universidad Diego Portales, Santiago, Chile (2006 and 2007), Univ. Nac. del Noreste, Corrientes, Argentina; Univ. Catolica, Arequipa, Peru (2006). NTT Data, Tokyo, Japan, National Informatics Institute (2007,08,09,10), Tokyo, Japan, Fudan University, Shanghai, China (2010); Beijing University, China (2010), University of Electronic Science of China, Chengdu, 2010, Temple University, Philadelphia, PA, 2015.

Recent PC Memberships

- Co-chair of workshop on Models and Modeling for Security and Privacy. ER 2006 , Gifu, Japan, 14-17th November. <http://er2016.cs.titech.ac.jp/>

Program Committee of the IFIP conference: International Cross Domain Conference and Workshop (CD-ARES 2016), http://cd-ares-conference.eu.dd21728.kasserver.com/?page_id=10 held in conjunction with ARES 2016. 11th International Conference on Availabili-

ty, Reliability and Security (“ARES”), **August 31 - September 2, 2016**, Salzburg, Austria.

- Program committee for NTMS 2016 Security Track (NTMS'2016 - Security Track).Larnaca, Cyprus, 21-23 November 2016.
- International Workshop on Information Systems Security Engineering, WISSE'11, WISSE'12-WISSE'16, in conjunction with CAiSE (International Conference on Advanced Information Systems Engineering)

DBSec 2014-2015

- DBSec 2013 and 6th Annual IFIP WG 11.3 Working Conference on Data and Applications Security and Privacy (DBSec 2012), Paris, France, July 11-13, 2012. <http://conferences.telecom-bretagne.eu/dbsec2012/>
- 25th Annual WG 11.3 Conference on Data and Applications Security and Privacy (DBSEC-2011). Richmond Virginia, July 11-13, 2011.

SECURWARE 2013, 2014

- SECURWARE 2012, August 19 - 24, 2012 - Rome, Italy, part of NetWare 2012; <http://www.iaia.org/conferences2012/SECURWARE12.html>
- SECURWARE 2011, August 21-27, 2011, 2012, 2013
Côte d'Azur, France, part of NetWare 2011 umbrella;
<http://www.iaia.org/conferences2011/SECURWARE11.html>
- SECURWARE 2014, November 16 - 20, 2014 - Lisbon, Portugal, part of NetWare 2014 ; <http://www.iaia.org/conferences2014/SECURWARE14.html>
- 2nd Cloud and Autonomic Computing Conference (CAC 2014), London, United Kingdom, September 2014.

13th IEEE Int.High Assurance Systems Engineering Symposium (HASE 2011), Boca Raton, Nov. 10-12, 2011, <http://www.cse.fau.edu/hase2011/>

- :
IWSSC'11, the First Workshop on Securing Services on the Cloud (IWSSC 2011), in conjunction with the 5th International Conference on Network and System Security (NSS 2011), September 6-8, 2011, Milan, Italy

14th Information Security Conference (ISC 2011) , Xian, China, October 2011

- 15th ISC, Passau, Germany

Trustbus 2011, the 8th International Conference on Trust, Privacy and Security in Digital Business, Toulouse, France, 29 August – 2 September, 2011

- Trustbus 2012, 2013.
- 23rd International Conference on Software Engineering and Knowledge Engineering (SEKE2011) , <http://www.ksi.edu/seke/seke11main.html>, Miami Beach,

USA, July 7-9, 2011.

International Conference on Security and Cryptography (SECRYPT 2011).

- SECRYPT 2012, SECRYPT 2014

First Workshop on Securing Services on the Cloud (IWSSC 2011), in conjunction with the 5th International Conference on Network and System Security (NSS 2011), September 6-8, 2011, Milan, Italy

Conference on Wireless Computing and Networking (WCN2011), Nov. 16, 2011, Changsha, China

- Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DBSec), 2001-2014 . 28th IFIP WG 11.3 Conference on Data and Application Security and Privacy (DBSEC'14), Vienna, Austria, July 14-16, 2014.
- PATTERNS 2010-2015
- 6th and 7th International Workshop on Security In Information Systems (WOSIS), 2013-2014
- 12th and 13th International Information Security for South Africa conference (ISSA 2013 and 2014). <http://infosecsa.co.za/>
- NTMS'2014 - Security Track
- Fourth International Workshop on Information Systems Security Engineering (WISSE'14) to be held in conjunction with CAISE'14 at June 17, 2014, in Greece.
- 2nd International Workshop on Security and Privacy Preserving in e-Societies (SeceS 2014) , to be held in conjunction with MEDES 2014 (see <http://sigappfr.acm.org/MEDES/14/>), Buraidah Al Qassim, Saudi Arabia, September 2014.
- ICIIST 2014 (The 2nd International Conference on Intelligent Information Systems and Technology). Korea.
- 2nd Cloud and Autonomic Computing Conference (CAC 2014), London, UK, September 2014.

Older Program Committees (incomplete)

- [Intl. Conference on Databases, Parallel Architectures, and Applications \(PARBASE-90\), IEEE 1990.](#)
- [Intl. Workshop on Software Dependability, Beijing, China, August 1991.](#)
- [11th. IEEE Int. Symp. on Reliable Distributed Systems, Houston, TX, October 1992.](#)
- [12th. IEEE Int. Symposium on Reliable Distributed Systems, Princeton, NJ, October 1993.](#)
- [3rd Intl. Conference on Object-oriented Information Systems \(OOIS'96\).](#)
- [Int. Conference on Database and Expert Systems Applications \(DEXA1999 to 2010\)](#)
- [Int. Workshop on Electronic Commerce and Security \(EC-Web\), 1999 to 2010](#)

- [Int. Conference on the Unified Modeling Language, 1999 and 2000](#)
- [10th Int. Symposium on Software Reliability Engineering \(ISSRE'99\)](#)
- [XXV Latinamerican Conference on Informatics \(CLEI'99\) and CLEI 2007](#)
- [User Identification and Privacy Protection--Appl. in Public Admin. and Electronic Commerce \(UIPP'99\)](#)
- [Argentinian Technology Symposium, AST 2000, 2002, 2006, 2009.](#)
- Australasian Symposium on Information Security, 2003 and 2004.
- Conference on Trust and Privacy in Digital Business (TrustBus), 2002 to 2011.
- IASTED Conference on Communications, Networks, and Security, CNIS, 2003-7.
- Editor of special issue of *Journal of Software and Systems Modeling* (SoSym) on Critical Systems Development using UML (June 2003).
- Intl. Conference of the Information Resources Management Association (*IRMA 2005*), San Diego, CA, May 2005.
- Latin American and Caribbean Conference for Engineering and Technology (LACCEI). 2006-2011.
- 6th and 7th International Workshop on Security In Information Systems (WOSIS), 2008-2014
- Pattern Languages of Programs (PLoP), 2008-2011
- 11th Int. Conf. on Information Security and Cryptology (ICISC;08) , Dec. 4-5, 2008, Seoul, Korea,
- Asia-Pacific Web Conference (APWeb) 2009 and 2010
- ACM Annual International Conference on Design of Communication (SIGDOC 2008-2011)
- 1st International Workshop on Data Quality and Security (DQS 2009), in conjunction with CIKM conference in Hong Kong.
- WSNS 2009-11, IEEE International Workshop on Wireless and Sensor Networks Security.
- 13th and 14th Information Security Conference (ISC 2010-11), Boca Raton, FL and Xian, China, October 2010-11.

Conference/Workshop organization

- Int. Workshop on Software Dependability, Beijing, September 17-18, 1991 (sponsored by the Institute of Computing Technology, Academia Sinica, China)
- Workshop on Critical Systems Development and UML at the 2004 International Conference on UML, October 2004, Lisbon, Portugal.
- Workshop on Secure systems methodologies using patterns (SPattern) , 2007-2010; in conjunction with ARES
- First International Symposium on Software Architecture and Patterns
In conjunction with the 10th Latin American and Caribbean Conference for Engineering and Technology July 23-27, 2012, Panama City, Panama
<http://www.laccei.org/index.php/events/laccei-conference-2012/issap->
- Workshop on Redefining and Integrating Security Engineering (RISE'12), Washington DC, December 14 - 16, part of the ASE/IEEE International Conference on Cyber Security 2012

Recent Editorships

2011-2015: Editorial Board of a new journal, *Communications and Computer Security*. This is an interdisciplinary journal covering all areas of security in communications and computer systems. It is published by Acta Press. <http://www.actapress.com>

Special issue of "Future Internet" on Advances in web services, October 2011.

Professional Service

Professional Societies

Member of ACM since 1973. Member of IEEE Computer Society since 1975. Senior Member IEEE(1984).

Professional Engineer -- Registered Florida (1986) (inactive)

Committees

University of Miami: Member of Committee on Computer Literacy (August 1982*-- December 1983). Member of Committee on Intelligent Computer Systems (January*-- December 1983). Member of University of Miami Academic and Research Computing Advisory Committee (January)-- December 1983). **Florida Atlantic University:** Member of Committee for Ph. D. Program on Computer Engineering (Fall, 1983). Member of University Senate (April 1984)-- March 1985). Member of Graduate Admissions Committee (October 1984 -- August 1990). Chairman of Ph.D. Qualifying Examination Committee for Computer Engineering. Chairman of College of Engineering Computer Committee (1985-1986). Member of Department's Committee on Equipment (1985)-- 1986). Member of FAU's Graduate Council (1985*- 1988). Member of College of Engineering Promotion and Tenure Committee(1987*-- 1992). Chairman of Computer Engineering Admissions Committee (1986)- 1991). Member of Dept.'s Graduate Committee (1991 – 93, 1996-99, 2002-2008). Chairman of Dept.'s Research Committee (1991-- 95). Member and chairman of Research and graduate Committees, 1996-1999. TA/GA committee, member and chair (1999-2001). Member of Undergraduate CS Committee (2002) and Undergraduate CE Committee (2003-2007). Member of Faculty Hiring Committee, 2004 and 2006. Member of Committee to evaluate the dean of the Graduate College of FAU (2007). Member of graduate committee 2006-2011.

Obtained for the Department free or at reduced cost: Occam Compiler, Ridge 32C Computer, ISPS Computer Simulator, Intel Series IV Development System. Selected for the College of Engineering an Ethernet Local Area Network.

Consultancies

IBM Corporation (Boca Raton, FL; Austin, TX), IBM Instruments, Motorola (Paging Products Div., Boynton Beach, FL, Plantation, FL), Bendix Avionics, National Computer Security Center (DoD), Harris Corporation (Melbourne, FL), Beckman-Coulter (Miami, FL), Lucent Technologies (Holmdel, NJ, Andover, MA, and L'Isle, IL), MCIWorldcom

(Jackson, MI and Houston,TX), Panasonic Development Center, Calgary, Canada, Huawei Technologies (China), and others.

Honors and Awards

- IBM First Invention Plateau, July 1979 (\$2,400).
- IBM Special Award for Relations IBM - Yale University, August 1989 (\$1,000).
- Listed in ``Who's Who in Frontier Science and Technology," Marquis 1984.
- Invited by the Italian National Research Council for two weeks to participate in research project at the University of Genoa (June 1987).
- Invited by the Government of Taiwan for a 10-day visit in August 1988, to lecture at several universities.
- Invited by the Government of the People's Republic of China to lecture at several universities, for 4 weeks in 1986, for 4 weeks in 1988, and for 4 weeks in 1991.
- Appointed Visiting Professor by the Railway University, Shanghai, China (1991).
- Invited by Ben Gurion University, Israel, for two weeks in 1989 to participate in research project and give lectures.
- College of Engineering Outstanding Achievement Award (\$1,000), October 1990.
- Sent by NSF to discuss research projects with Chile and Argentina, May 2000.
- Shepherding Award, EuroPLoP (Pattern Languages of Programs), Munich, 2002.
- Shepherding Award, PLoP , Monticello, IL, 2002.
- Appointed Visiting Professor at the University of Pilar, Paraguay (2006) and Universidad Nacional del Este, Ciudad del Este, Paraguay, (2007).
- Keynote speaker: *5th Latin American Conference on Pattern Languages of Programs*, Campos do Jordao, Brazil, August 16-19, 2005.
- Keynote speaker at the the Eight International Symposium on System and Information Security - SSI'2006, November 08-10, 2006.
<http://www.ssi.org.br/english/> Sponsored by the Aeronautical Institute of Technology (ITA) Computer Science Department - IEC, Sao Jose dos Campos – Sao Paulo, Brazil.
- Best paper award: E.B.Fernandez, J.C. Pelaez, and M.M. Larrondo-Petrie, "Security patterns for voice over IP networks", *Procs. of the 2nd IEEE Int. Multiconference on Computing in the Global Information Technology (ICCGI 2007)*, March 4-9, Guadeloupe, French Caribbean.
- Keynote speaker at the *1st Int. Workshop on Software Patterns and Quality (SPAQu'07)*, Nagoya, Japan, December 3, 2007, colocated with the 14th Asia-Pacific Software Engineering Conference (APSEC).
- Keynote speaker at the 6th Int. Workshop on Security in Information Systems (WOSIS 2008), Barcelona, Spain, June 2008.
- Nomination from the College of Engineering for the Researcher of the Year award (professor level). 2011
- Featured Reviewer for ACM Computing Reviews:
<http://www.reviews.com/blog>

- Invited seven times to visit the National Institute of Informatics in Tokyo, Japan to work with one of their research groups (November 2007, July 2008, July 2009, March 2010, July 2010, October 2011, March 2014). They paid my expenses all these times.
- Israel July 31-August 8, 2009. Deutsche Telekom Distinguished Lecture in Ben-Gurion University, Beer Sheva, Israel.
- Keynote speaker [XXXII Conferencia Internacional de la Sociedad Chilena de Ciencias de la Computación \(SCCC 2013\)](#), Temuco, Chile, November 11-15, 2013
- Keynote speaker at the 42 Jornadas Argentinas de Informática (JAIIO), WSegI 2013, Workshop de Seguridad Informatica. <http://www.42jaiio.org.ar/?q=w>
- Our paper : Keiko Hashizume, David G. Rosado, Eduardo Fernández-Medina, Eduardo B. Fernandez, “An Analysis of Security issues for Cloud Computing”, *Journal of Internet Services and Applications* 2013, 4:5 (27 February 2013) , has been one of the most downloaded papers in 2013 for this journal

Sponsored Research

(P.I. in all of these grants unless otherwise indicated)

- Institute of International Education -- \$4,000 to pursue graduate studies (September 1961-September 1962).
- Organization of American States -- \$7,000 for graduate studies (Sept. 1971-August 1972).
- University of Miami Initiation Grant, September 1981 (\$5,000).
- IBM Corporation, series of lectures on 32-bit microprocessors and fault tolerant systems (\$3,500).
- IBM Corporation Grant, work on S/I architecture (\$20,400), September 1984 to August 1985.
- Motorola Corporation (\$12,000), for research on reliable concurrent systems (January 1987 - March 1988).
- Florida High Tech Grant for Robotics research (to develop fault-tolerant robotic multiprocessing system). \$30,000 for 1987, \$15,00 for 1988.
- Bendix Avionics (\$37,500) for research on fault tolerant systems (January-December 1987).
- Florida High Tech Grant on software engineering (\$58,500 for 1988, \$52,000 for 1989, \$52,700 for 1990). Co-PI. . N. Coulter.
- Florida High Tech Grant, subcontract from the University of Florida project on Data Security (\$19,200 for 1988, \$12,000 for 1989).
- IBM contract to develop bus communication architecture (\$21,000 for 1989). Co-PI N. Coulter.
- Racal-Milgo, Fort Lauderdale, (Co-PI M. Ilyas), \$16,000 for study on Object-Oriented Programming and Network Reliability, 1989.

- European Institute for System Security, \$1,000 to attend Workshop on Data Security, Karlsruhe, Germany, April 1990.
- NATO, \$1,000 to attend Advanced Study Institute on Real-time computing, St. Maarten, October 1992.
- Office of Naval Research, \$850 to attend Workshop on Database Security, Halifax, UK, 1990; \$1050 to attend Workshop on Database Security, Bad Salzdetfurth, Germany, 1994, \$550 to attend Conference on Database Security, New York, 1995.
- Motorola, Paging Products Division, \$35,000 for project on object-oriented software. July 1996-February 1997.
- Motorola, GSG, \$10,200 for project on software quality. November 2002- May 2003.
- Grant from Addison-Wesley (\$1,000), for work on security textbook (2005).
- FAU Research Div. Travel Grant (\$1,200) to present papers and give lectures in Germany.
- Earmark project Secure Telecomm. Networks. "Wireless web services security". 2004-2006: \$251,000. 2008-2009: \$127,000.
- NSF 0434533 (Efficient and localized broadcasting in ad-hoc wireless networks) PI, 09/01/2007 to 08/31/2009, \$294,781, PI: J. Wu
- NSF 0626240 (Dynamic carrier-assisted routing in mobile networks), 9/1/06-8/31/09; \$164,231 PI: J. Wu
- Travel grant from the National Inst. of Informatics, Tokyo, Japan, to attend meetings and conference: \$13,000 (2007-2016)
- Motorola Corp., Fall 2009-Spring 2010. \$65,000
- NATIONAL COMMISSION FOR SCIENTIFIC & TECHNOLOGICAL RESEARCH (CONICYT), Chile, \$60,000 (March-Dec. 2013)
- Conicyt, Chile, co-PI, "Empirical comparison of tactics and patterns for building secure systems", \$140,000 (March 2014-February 2017)

MENTORING

Ph D Dissertations

Completed (15):

Dereje Yimam, "Compliance issues in cloud computing", Fall 2015, Office Depot

Ajoy Kumar, "Unifying the conceptual levels of network security through the use of patterns", January 2014, Rev-Chain

Ola Ajaj, "Modeling and Analysis of security standards for web services and cloud computing", July 2013, Professor at Temple University

Amelia Keiko Hashizume, "A reference architecture for cloud computing and its security applications", February 2013. Lexis-Nexis

Ingrid Buckley: "Towards a methodology for building reliable and secure systems" (2012), Professor at Tuskegee University, AL

Nelly Delessy, “A Pattern-Driven Process for Secure Service-Oriented Applications”
2008 Professor at Grambling State University in Louisiana.

Juan C. Pelaez, “VoIP network security and forensic models using patterns”, 2007. DISA,
U.S. Army

Timothy G. Woodcock, “Extensions to real-time object-oriented design methodologies”,
1996. Professor at Texas A&M University, Killeen, TX

Praduemn Goyal (Co-chairman J. Wu), “Fault-tolerant parallel computing using shuffle
exchange hypercube and cube-connected cubes”, 1998. AT&T, Boston

Yijun Wang (Co-chairman J. Wu), “A unified methodology for software and hardware
fault tolerance”, 1995. IBM Research

Maria M. Larrondo-Petrie (Co-chairman Neil Coulter), 1992. Now at FAU, CEECS.
Associate Dean, College of Engineering and Computer Science.

Shao Wei Leu, “Reliability modeling of fault-tolerant software”, 1990. Prof. National
Taiwan University.

Richard Bealkowski, “A heterogeneous multiprocessor architecture for workstations”, 1990.
IBM, Redmond, WA

Jie Wu, “The design of reliable decentralized computer systems”, 1989. Chairman of the
Computer Science Dept., Temple University, Philadelphia, PA

External:

Anton Uzunov, University of Adelaide, Australia (PhD, 2013)

Miguel Solinas, Universidad Nacional de Cordoba, Argentina (M.S. 2011)

Fabricio Braz, University of Brasilia, Brazil (PhD, 2009)

Oscar

In progress (4):

Adrian Pasarariu, “Mashup security models and patterns”

Virginia Romero. “Secure development of cyber-physical systems”

Ali Alkazimi, “Modeling threats in computer networks”

Madiha H. Syed, “Cloud computing ecosystems”

Committee member for external Ph.D. and MS theses:

University of Calcutta, India (1993);
Indian Institute of Technology, New Delhi, India (1994);
University of Nice, France (PhD, 1998);
Georgia Institute of Technology (PhD, 1998); Yong-Chul Oh, (Prof. S. Navathe)
Catholic University, Santiago, Chile (PhD, 1999)
Nanyang Institute of Technology, Singapore (PhD, 2002).
Boris Rozenberg, Ben-Gurion University, Israel (PhD, 2010)
Liz Mundo, Instituto Tecnológico de Monterrey, Mexico (M.S. 2010)
David LaRed, University of Malaga, Spain, (PhD, 2011)

MS Theses

Completed (39):

Paulina Silva, UTFSM, Chile, 2015 (cochairman: Raul Monge)

Oscar Encina, UTFSM, Chile, February 2014 (cochairman: Raul Monge)

Carolina Marin, “Patterns for social networks in Web 2.0”, Fall 2011

Ola Ajaj, “Patterns for web services standards”, 2010
Temple University

Anupama Sahu (co-chairman): “Patterns for wireless sensor networks”, 2010

Jose Ortiz-Villajos, “Implementing security in an IP Multimedia Subsystem (IMS) Next Generation Network-A case study”, 2009
Now at Siemens Networks, Atlanta

Keiko Hashizume, “Web services cryptographic patterns”, 2009
Now at Lexis Nexis, Boca Raton, FL

Ingrid Buckley, “Patterns for web services reliability standards”, 2008

Patrick Morrison, “Model-driven architecture and the secure systems methodology”, 2007.
Now pursuing PhD at NC State University.

Ana C. DeSouza-Doucet, “Controlling access to physical locations”, 2006

Tami W. Sorgente, “Modeling access control of medical information”, 2004. Instructor at
CEECS, FAU

Juan C. Pelaez, “Security in Voice over IP networks”, 2004. DISA, US Army

Richard Z. Xue, “Secure access of legacy databases from the web using CORBA”, 2000

David P. Walls, "A critical comparison of three user interface architectures in Object-oriented design", 1999, Pratt & Whitney, Connecticut

Sherri Scharf, "Object-oriented analysis and design of a serial peripheral interface monitor", 1998. Motorola, Plantation

Mahbub M. Anwar, "Modeling use cases and their sequences in object-oriented analysis", 1997.

John C. Hawkins, "Extending use cases and interaction diagrams to develop distributed system architecture requirements", 1997. Now pilot for Northwestern Airlines.

Debera R. Hancock, "A methodology for object-oriented modeling and design of real-time, fault-tolerant systems", 1997. Manager at IBM, Boca Raton

Zhi Wei Peng, "Object-oriented models for manufacturing inventory control systems", 1997

Karen Kastritis (chairman Jim Han), "An object-oriented model for a manufacturing resource planning system", 1996

Dong Wei, "Formal specification of authorization and user group models for object-oriented databases", 1995.

Pei Der Chien, "Object-oriented modeling of multimedia conferencing systems", 1994.

Bassem Abou-Haidar, "Object-oriented design of flexible manufacturing systems", 1993

Joy Veradt, "A selectively redundant file system", 1992. IBM Corp.

Haiyan Song, "An authorization model for object-oriented and semantic databases", 1990

Shubhada. Kulkarni, "A robot controller using transputers", 1990.

Unmesh Bhathija, "A multiprocessor simulator to test fault detection and reconfiguration algorithms", 1990.

Satish Pendse, "A recovery metaprogram for fault diagnosis in a network of processors", 1990.

Peter C. Buechler, "An ultrareliable multicomputer architecture for real-time control applications", 1989. Sandia Labs, Phoenix, AZ

Ruiguang Zhang, "A parallel and reliable robot control system", 1989. Motorola, Plantation

Daniel Clifton, "Microprocessor design for non-discretionary multilevel security", 1988

William A. Franklin, "An efficient test strategy for microprogrammable minicomputers", 1988.

Brenda Ozaki, "The implementation of software fault tolerance in the Intel 80286 processor", 1987, IBM Corp.

Shi-Yer Kang, "The design and implementation of a decentralized security administration system", 1987. IBM Corp.

Hamid Yazdani, "Diagnosis of microprocessors using self-test and its application to multiprocessing", 1987.

Lixin Gao, "Using a superprocess to accelerate conversations for fault-tolerant concurrent software", 1987. Now a professor at the University of Massachusetts, Amherst. MA

Seok Tae Yoon, "Performance evaluation of a Ridge 32 computer system", 1986.

Ton Ngo, "Optimal scheduling of processes for a network of transputers", 1986. Now at IBM Research, Yorktown Heights, NY

Jesus Sarmiento, "Generic network executive", 1986

David J. Murphy III, "A maintenance processor for the IBM Series/1", 1985, IBM Corp.

Directed Independent Study (incomplete list) (26)

Omar Toledo, "Comparing cloud computing security architectures", Fall 2014

Gerald Hilgenberg, Fall 2013 (CIS6370)

Dereje Yimam, "Cybersecurity for smart grids", Summer 2013.

Clyde Carryl, "Software-defined networks", Spring 2013.

Dereje Yimam, "Cloud computing security", Summer 2012

Ola Ajaj, "Security in cloud and mobile devices", Fall 2010

Carolina Marin: "Object-oriented design and patterns", Summer 2010

Adrian Pasarariu: "Identity in cloud-based systems", Summer 2010

Keiko Hashizume, Misuse patterns in cloud computing, Summer 2010
“Cloud security”, Spring 2011

Ingrid Buckley, “Architectures for fault tolerance “, Fall 2010
“Integrating fault-tolerance patterns”, Spring 2009

Ola Ajaj: “BPEL security “, Summer 2009

Keiko Hashizume, “Data security”, Summer 2008

Jose Ortiz-Villajos, “Network patterns’, Spring 2008

Ingrid Buckley, “Dependability patterns”, Spring 2008

Ricardo Castellanos, “Object-oriented design and patterns”, Spring 2008

Keiko Hashizume, “Object-oriented design and patterns”, Spring 2008

Ajoy Kumar, “Security models for SCADA systems”, Fall 2007,

Juan Pelaez, “Computer forensic models in wireless systems”, Spring 2007

Carlos Pertuz, “Secure pipes and filters”, Spring 2007

Tami Sorgente, “Object-oriented design and patterns”, 2004

Vivian Hays and Marc Loutrel (French interns), " The Object Filter and Access Control Framework", Spring 2000

Y.-L. Chang, "Applying a PAC framework to a radio display", Spring 1997.

Elena Silenok, “IBM Websphere security”, Spring 1996