

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTEL CORPORATION,

Petitioner

v.

FG SRC LLC,

Patent Owner

CASE NO.: UNASSIGNED

PATENT NO. 7,149,867

DECLARATION OF JACOB ROBERT MUNFORD

Mail Stop **PATENT BOARD**
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

1. My name is Jacob Robert Munford. I am over the age of 18, have personal knowledge of the facts set forth herein, and am competent to testify to the same.

2. I earned a Master of Library and Information Science (MLIS) from the University of Wisconsin-Milwaukee in 2009. I have over ten years of experience in the library/information science field. Beginning in 2004, I have served in various positions in the public library sector including Assistant Librarian, Youth Services Librarian and Library Director. I have attached my Curriculum Vitae as Appendix A.

3. During my career in the library profession, I have been responsible for materials acquisition for multiple libraries. In that position, I have cataloged, purchased, and processed incoming library works. That includes purchasing materials directly from vendors, recording publishing data from the material in question, creating detailed material records for library catalogs and physically preparing that material for circulation. In addition to my experience in acquisitions, I was also responsible for analyzing large collections of library materials, tailoring library records for optimal catalog search performance and creating lending agreements between libraries during my time as a Library Director.

4. I am not a lawyer and I am not rendering an opinion on the legal question of whether a particular document is, or is not, a “printed publication” under

the law. I am, however, rendering my opinion on the authenticity of the documents referenced herein and when and how each document was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, could have located the document.

5. I am informed by counsel that an item is considered authentic if there is sufficient evidence to support a finding that the item is what it is claimed to be. I am also informed that authenticity can be established based on the contents of the documents themselves, such as the appearance, content, substance, internal patterns, or other distinctive characteristics of the item.

6. I am informed by counsel that a given reference qualifies as “publicly accessible” if it was disseminated or otherwise made available such that a person interested in and ordinarily skilled in the relevant subject matter could locate it through the exercise of ordinary diligence.

7. While I understand that the determination of public accessibility under the foregoing standard rests on a case-by-case analysis of the facts particular to an individual publication, I also understand that a printed publication is rendered “publicly accessible” if it is cataloged and indexed by a library such that a person interested in the relevant subject matter could locate it (*i.e.*, I understand that cataloguing and indexing by a library is sufficient though there are other ways that

a printed publication may qualify as “publicly accessible”). One manner of sufficient indexing is indexing according to subject matter. I understand that it is not necessary to prove someone actually looked at the printed publication in order to show it was publicly accessible by virtue of a library’s cataloging and indexing thereof. I understand that cataloging and indexing by a single library of a single instance of a particular printed publication is sufficient. I understand that, even if access to a library is restricted, a printed publication that has been cataloged and indexed therein is publicly accessible so long as a presumption is raised that the portion of the public concerned with the relevant subject matter would know of the printed publication. I also understand that the cataloging and indexing of information that would guide a person interested in the relevant subject matter to the printed publication, such as the cataloging and indexing of an abstract for the printed publication, is sufficient to render a printed publication publicly accessible.

8. I understand that evidence showing the specific date when a printed publication became publicly accessible is not necessary. Rather, routine business practices, such as general library cataloging and indexing practices, can be used to establish an approximate date on which a printed publication became accessible.

9. I have been informed by counsel that a “person of ordinary skill in the art at the time of the inventions” (POSITA) is a hypothetical person who is presumed to be familiar with the relevant field and its literature at the time of the inventions.

This hypothetical person is also a person of ordinary creativity, capable of understanding the scientific principles applicable to the pertinent field.

10. I have been informed by counsel to assume that persons of ordinary skill in this subject matter or art would have included someone with at least (1) an undergraduate degree in electrical engineering or related field together with three years of experience in computer processor architecture and field programmable gate arrays (“FPGAs”); or (2) a master’s degree in electrical engineering or related field with two or more years of experience in computer processor architecture and FGPAs.

11. It is my opinion that such a person would have been actively engaged in academic research and learning through obtaining their degree and practice in the field, and possibly through formal instruction through the bibliographic resources relevant to his or her research. Such a person would have had access to a vast array of print resources, including at least the documents referenced below.

12. I am fully familiar with the catalog record creation process in the library sector. In preparing a material for public availability, a library catalog record describing that material would be created. These records are typically written in Machine Readable Catalog (herein referred to as “MARC”) code and contain information such as a physical description of the material, metadata from the material’s publisher, and date of library acquisition. In particular, the 008 field of

the MARC record is reserved for denoting the date of creation of the library record itself. As this typically occurs during the process of preparing materials for public access, it is my experience that an item's MARC record indicates the date of an item's public availability.

13. In my experience, the vast majority of library books cataloged and prepared for public availability in this fashion are made publicly available within 1 to 10 weeks of initial record creation. This window of time accounts for the standard library practices of purchasing the material, waiting for a shipment, designating in which collection the book will be housed, creating a MARC record, denoting the physical copies of the book with the library's markings and uploading the finished record to the public-facing library catalog. Claims of public availability in this declaration are based upon the 008 fields of the MARC record in question as well as quantity of library holdings. When a material is held by multiple libraries, comparing the 008 fields of those records provides a specific window for public availability.

14. This declaration is being drafted as of July 21, 2020, in the midst of the COVID pandemic. While I would normally seek to scan the library materials used for authentication in this document, all libraries within my usual travel range have been closed since March 2020. I live in Pittsburgh, Pennsylvania and Allegheny County is under a travel advisory, making it unsafe for me to pursue these materials in person.

15. I have reviewed Exhibit 1003 an article entitled “Architectural Adaptation of Application-Specific Locality Optimizations” by X. Zhang et al. as published in *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997* by IEEE (hereto referred to as ‘Zhang’).

16. Attached hereto as Appendix ZHANG01 is a true and correct copy of the MARC record describing *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997* as held by the University of Cincinnati. I secured this record myself from the University of Cincinnati’s library’s online catalog. The 008 field of this MARC record indicates *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997* was first cataloged by the University of Cincinnati library as of November 18, 1997.

17. Attached hereto as Appendix ZHANG02 is a true and correct copy of the MARC record describing *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997* as held by Cornell University. I secured this record myself from the Cornell University library’s online catalog. The 008 field of this MARC record indicates *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997* was first cataloged by the Cornell University library as of August 1, 2002.

18. Attached hereto as Appendix ZHANG03 is a true and correct copy of the MARC record describing *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997* as held by Michigan State University. I secured this record myself from the Michigan State University library's online catalog. The 008 field of this MARC record indicates *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997* was first cataloged by the Michigan State University library as of November 18, 1997.

19. The MARC records included within Appendices ZHANG01, ZHANG02 and ZHANG03 all accurately describe *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997*. All three MARC records accurately describe this publication's title, publisher and ISBN. As such, it is my determination that these records accurately describe *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997*. In comparing Exhibit 1003 to these three MARC records, it is my determination that Exhibit 1003 is a true and correct copy of *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997*.

20. The MARC records included within Appendices ZHANG01, ZHANG02 and ZHANG03 all contain 008 fields that designate the date of record

creation, indicating a range of public availability via these libraries and institutions. The 008 fields of ZHANG01 and ZHANG03 have an 008 field entry of November 18, 1997. The 008 field of ZHANG02 has an 008 field entry of August 1, 2002. Considering this information, it is my determination that *International Conference on Computer Design VLSI in Computers and Processors, Oct 12 - 15 1997* and therefore ‘Zhang’ was made available and accessible to the public by shortly after November 18, 1997 and certainly no later than August 1, 2002.

21. I have reviewed Exhibit 1004 an article entitled “Architectural Adaptation in AMRM Machines” by R. Gupta as published in *IEEE Computer Society Workshop on VLSI 2000: Proceedings* by IEEE (hereto referred to as ‘Gupta’).

22. Attached hereto as Appendix GUPTA01 is a true and correct copy of the MARC record describing *IEEE Computer Society Workshop on VLSI 2000: Proceedings* as held by Georgia Tech. I secured this record myself from the Georgia Tech library’s online catalog. The 008 field of this MARC record indicates *IEEE Computer Society Workshop on VLSI 2000: Proceedings* was first cataloged by the Georgia Tech library as of May 15, 2000

23. Attached hereto as Appendix GUPTA02 is a true and correct copy of the MARC record describing *IEEE Computer Society Workshop on VLSI 2000: Proceedings* as held by Notre Dame University. I secured this record myself from

the Notre Dame library's online catalog. The 008 field of this MARC record indicates *IEEE Computer Society Workshop on VLSI 2000: Proceedings* was first cataloged by the Notre Dame library as of May 15, 2000.

24. Attached hereto as Appendix GUPTA03 is a true and correct copy of the MARC record describing *IEEE Computer Society Workshop on VLSI 2000: Proceedings* as held by the Linda Hall Library. I secured this record myself from the Linda Hall Library's online catalog. The 008 field of this MARC record indicates *IEEE Computer Society Workshop on VLSI 2000: Proceedings* was first cataloged by the Linda Hall Library as of May 15, 2000.

25. The MARC records included within Appendices GUPTA01, GUPTA02 and GUPTA03 all accurately describe *IEEE Computer Society Workshop on VLSI 2000: Proceedings, 19-20 April 2001*. All three MARC records accurately describe this publication's title, publisher and ISBN. As such, it is my determination that these records accurately describe *IEEE Computer Society Workshop on VLSI 2000: Proceedings, 19-20 April 2001*. In comparing Exhibit 1004 to these three MARC records, it is my determination that Exhibit 1004 is a true and correct copy of *IEEE Computer Society Workshop on VLSI 2000: Proceedings, 19-20 April 2001*.

26. The MARC records included within Appendices GUPTA01, GUPTA02 and GUPTA03 all contain 008 fields that designate the date of record creation, indicating a range of public availability via these libraries and institutions.

The 008 fields of GUPTA01, GUPTA02 and GUPTA03 have an 008 field entry of May 15, 2000. Considering this information, it is my determination that *IEEE Computer Society Workshop on VLSI 2000: Proceedings, 19-20 April 2001* and therefore ‘Gupta’ was made available and accessible to the public by shortly after May 15, 2000.

27. I have reviewed Exhibit 1005 an article entitled “MORPH: A System Architecture for Robust Higher Performance Using Customization” by A. Chien and R. Gupta as published in *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)* by IEEE (hereto referred to as ‘Chien’).

28. Attached hereto as Appendix CHIEN01 is a true and correct copy of the MARC record describing *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)* as held by Cornell University. I secured this record myself from the Cornell University library’s online catalog. The 008 field of this MARC record indicates *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)* was first cataloged by the Cornell University library as of November 22, 1996.

29. Attached hereto as Appendix CHIEN02 is a true and correct copy of the MARC record describing *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)* as held by the University of Dayton.

I secured this record myself from the University of Dayton library's online catalog. The 008 field of this MARC record indicates *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)* was first cataloged by the University of Dayton library as of November 18, 1996.

30. Attached hereto as Appendix CHIEN03 is a true and correct copy of the MARC record describing *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)* as held by Indiana University. I secured this record myself from the Indiana University library's online catalog. The 008 field of this MARC record indicates *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)* was first cataloged by the Indiana University library as of November 18, 1996.

31. The MARC records included within Appendices CHIEN01, CHIEN02 and CHIEN03 all accurately describe *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)*. All three MARC records accurately describe this publication's title, publisher and ISBN. As such, it is my determination that these records accurately describe *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)*. In comparing Exhibit 1005 to these three MARC records, it is my determination that Exhibit 1005 is a true and correct copy of *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)*.

32. The MARC records included within Appendices CHIEN01, CHIEN02 and CHIEN03 all contain 008 fields that designate the date of record creation, indicating a range of public availability via these libraries and institutions. The 008 field of CHIEN01 has an 008 field entry of November 22, 1996. The 008 fields of CHIEN02 and CHIEN03 have an 008 field entry of November 18, 1996. Considering this information, it is my determination that *Proceedings of 6th Symposium on the Frontiers of Massively Parallel Computation (Frontiers '96)* and therefore 'Chien' was made available and accessible to the public by shortly after November 18, 1996.

33. I have reviewed Exhibit 1011, an article entitled "Safe and Protected Execution for the Morph/AMRM Reconfigurable Processor" by Andrew A. Chien & Jay H. Byun as published in *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99* by IEEE (hereto referred to as 'Byun').

34. Attached hereto as Appendix BYUN01 is a true and correct copy of the MARC record describing *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99* as held by Carnegie Mellon University. I secured this record myself from the Carnegie Mellon University library's online catalog. The 008 field of this MARC record indicates *Seventh Annual IEEE*

Symposium on Field-Programmable Custom Computing Machines: FCCM '99 was first cataloged by the Carnegie Mellon library as of December 7, 1999.

35. Attached hereto as Appendix BYUN02 is a true and correct copy of the MARC record describing *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99* as held by Notre Dame University. I secured this record myself from the Notre Dame University library's online catalog. The 008 field of this MARC record indicates *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99* was first cataloged by the Notre Dame library as of December 7, 1999.

36. Attached hereto as Appendix BYUN03 is a true and correct copy of the MARC record describing *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99* as held by University of Pennsylvania - Franklin. I secured this record myself from the University of Pennsylvania – Franklin library's online catalog. The 008 field of this MARC record indicates *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99* was first cataloged by the University of Pennsylvania - Franklin library as of September 30, 2000.

37. The MARC records included within Appendices BYUN01, BYUN02 and BYUN03 all accurately describe *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99*. All three MARC records

accurately describe this publication's title, publisher and ISBN. As such, it is my determination that these records accurately describe *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99*. In comparing Exhibit 1011 to these three MARC records, it is my determination that Exhibit 1011 is a true and correct copy of *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99*.

38. The MARC records included within Appendices BYUN01, BYUN02 and BYUN03 all contain 008 fields that designate the date of record creation, indicating a range of public availability via these libraries and institutions. The 008 fields of BYUN01 and BYUN02 have an 008 field entry of December 7, 1999. The 008 field of BYUN03 has an 008 field entry of September 30, 2000. Considering this information, it is my determination that *Seventh Annual IEEE Symposium on Field-Programmable Custom Computing Machines: FCCM '99* and therefore 'Byun' was made available and accessible to the public by shortly after December 7, 1999 and certainly no later than September 30, 2000.

39. I have reviewed Exhibit B to Exhibit 1006, a textbook entitled "Computer Architecture: A Quantitative Approach" by John L. Hennessy and David A Patterson as published by Morgan Kaufman Publishers, Inc.

40. Attached hereto as Appendix HENNESSY01 is a true and correct copy of the MARC record describing "Computer Architecture: A Quantitative Approach"

as held by Case Western University. I secured this record myself from the Case Western University library's online catalog. The 008 field of this MARC record indicates "Computer Architecture: A Quantitative Approach" was first cataloged by the Case Western library as of July 12, 1989.

41. Attached hereto as Appendix HENNESSY02 is a true and correct copy of the MARC record describing "Computer Architecture: A Quantitative Approach" as held by Marietta College. I secured this record myself from the Marietta College library's online catalog. The 008 field of this MARC record indicates "Computer Architecture: A Quantitative Approach" was first cataloged by the Marietta College library as of July 12, 1989.

42. Attached hereto as Appendix HENNESSY03 is a true and correct copy of the MARC record describing "Computer Architecture: A Quantitative Approach" as held by Gettysburg College. I secured this record myself from the Gettysburg College library's online catalog. The 008 field of this MARC record indicates "Computer Architecture: A Quantitative Approach" was first cataloged by the Gettysburg College library as of November 20, 1990.

43. The MARC records included within Appendices HENNESSY01, HENNESSY02 and HENNESSY03 all accurately describe "Computer Architecture: A Quantitative Approach". All three MARC records accurately describe this publication's title, publisher and ISBN. As such, it is my determination that these

records accurately describe “Computer Architecture: A Quantitative Approach”. In comparing Exhibit 1006 to these three MARC records, it is my determination that Exhibit 1006 is a true and correct copy of “Computer Architecture: A Quantitative Approach”.

44. The MARC records included within Appendices HENNESSY01, HENNESSY02 and HENNESSY03 all contain 008 fields that designate the date of record creation, indicating a range of public availability via these libraries and institutions. The 008 fields of HENNESSY01 and HENNESSY02 have an 008 field entry of July 12, 1989. The 008 field of HENNESSY03 has an 008 field entry of November 20, 1990. Considering this information, it is my determination that “Computer Architecture: A Quantitative Approach” was made available and accessible to the public by shortly after July 12, 1989 and certainly no later than November 20, 1990.

45. I have been retained on behalf of the Petitioner to provide assistance in the above-illustrated matter in establishing the authenticity and public availability of the documents discussed in this declaration. I am being compensated for my services in this matter at the rate of \$100.00 per hour plus reasonable expenses. My statements are objective, and my compensation does not depend on the outcome of this matter.

46. I declare under penalty of perjury that the foregoing is true and correct. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Date: August 7, 2020

Respectfully submitted

A handwritten signature in black ink, appearing to read 'Jacob', with a long, sweeping flourish extending to the right.

Jacob Robert Munford

Appendix A - Curriculum Vitae

Education

University of Wisconsin-Milwaukee - MS, Library & Information Science, 2009
Milwaukee, WI

- Coursework included cataloging, metadata, data analysis, library systems, management strategies and collection development.
- Specialized in library advocacy and management.

Grand Valley State University - BA, English Language & Literature, 2008
Allendale, MI

- Coursework included linguistics, documentation and literary analysis.
- Minor in political science with a focus in local-level economics and government.

Professional Experience

Researcher / Expert Witness, October 2017 – present

Freelance

Pittsburgh, Pennsylvania

- Material authentication and public accessibility determination. Declarations of authenticity and/or public accessibility provided upon research completion. Depositions provided on request.
- Research provided on topics of public library operations, material publication history, digital database services and legacy web resources.
- Past clients include Apple, Fish & Richardson, Erise IP, Baker Botts and other firms working in patent law.

Library Director, February 2013 - March 2015

Dowagiac District Library

Dowagiac, Michigan

- Executive administrator of the Dowagiac District Library. Located in Southwest Michigan, this library has a service area of 13,000, an annual

operating budget of over \$400,000 and total assets of approximately \$1,300,000.

- Developed careful budgeting guidelines to produce a 15% surplus during the 2013-2014 & 2014-2015 fiscal years.
- Using this budget surplus, oversaw significant library investments including the purchase of property for a future building site, demolition of existing buildings and building renovation projects on the current facility.
- Led the organization and digitization of the library's archival records.
- Served as the public representative for the library, developing business relationships with local school, museum and tribal government entities.
- Developed an objective-based analysis system for measuring library services - including a full collection analysis of the library's 50,000+ circulating items and their records.

November 2010 - January 2013

Librarian & Branch Manager, Anchorage Public Library

Anchorage, Alaska

- Headed the 2013 Anchorage Reads community reading campaign including event planning, staging public performances and creating marketing materials for mass distribution.
- Co-led the social media department of the library's marketing team, drafting social media guidelines, creating original content and instituting long-term planning via content calendars.
- Developed business relationships with The Boys & Girls Club, Anchorage School District and the US Army to establish summer reading programs for children.

June 2004 - September 2005, September 2006 - October 2013

Library Assistant, Hart Area Public Library

Hart, MI

- Responsible for verifying imported MARC records and original MARC cataloging for the local-level collection as well as the Michigan Electronic Library.
- Handled OCLC Worldcat interlibrary loan requests & fulfillment via ongoing communication with lending libraries.

Professional Involvement

Alaska Library Association - Anchorage Chapter

- Treasurer, 2012

Library Of Michigan

- Level VII Certification, 2008
- Level II Certification, 2013

Michigan Library Association Annual Conference 2014

- New Directors Conference Panel Member

Southwest Michigan Library Cooperative

- Represented the Dowagiac District Library, 2013-2015

Professional Development

Library Of Michigan Beginning Workshop, May 2008

Petoskey, MI

- Received training in cataloging, local history, collection management, children's literacy and reference service.

Public Library Association Intensive Library Management Training, October 2011

Nashville, TN

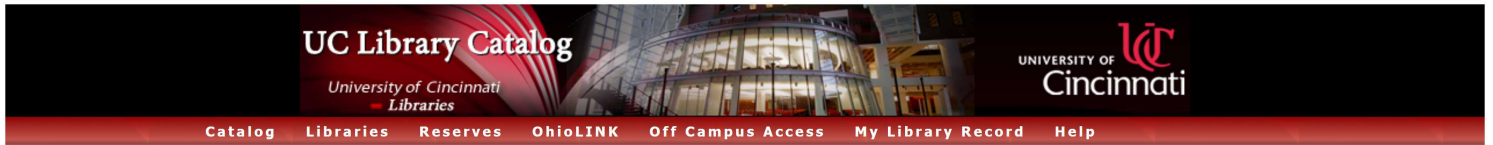
- Attended a five-day workshop focused on strategic planning, staff management, statistical analysis, collections and cataloging theory.

Alaska Library Association Annual Conference 2012 - Fairbanks, February 2012

Fairbanks, AK

- Attended seminars on EBSCO advanced search methods, budgeting, cataloging, database usage and marketing.

Appendix ZHANG01



CLICK & COLLECT - ITEMS WITH THE STATUS OF HELD BY LIBRARY ARE AVAILABLE FOR REQUEST. ITEMS FROM ONE LIBRARY LOCATION CANNOT BE REQUESTED FOR PICKUP AT ANOTHER LIBRARY LOCATION. FOR DETAILS VISIT [HTTPS://LIBRARIES.UC.EDU/ABOUT/COVID-19.HTML](https://libraries.uc.edu/about/covid-19.html)

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003 OCoLC
005 19980303073923.0
008 971118s1997 caua b 101 0 eng d
020 |z081868026X
020 0818682078 (case)
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040 NAT|cNAT|dUIU
111 2 IEEE International Conference on Computer Design|d(1997 :
|cAustin, Tex.)
245 10 International Conference on Computer Design :|bVLSI in
Computers and Processors, October 12-15, 1997, Austin,
Texas /|csponsored by IEEE Computer Society Technical
Committee on Design Automation, IEEE Circuits and Systems
Society
246 14 1997 IEEE International Conference on Computer Design
246 30 VLSI in Computers and Processors
246 30 ICCD'97
260 Los Alamitos, Calif :|bIEEE Computer Society Press,|cc1997
300 xix, 761 p. :|bill. ;|c28 cm
500 "IEEE Computer Society Press order number PR08026"--T.p.
verso
500 "IEEE Order Plan catalog number 97CB36149"--T.p. verso
504 Includes bibliographical references and index
533 Microfiche.|b[Piscataway, N.J. :|cIEEE Service Center,
Institute of Electrical and Electronic Engineers,|d1997].
|e9 microfiches ; 11 x 15 cm
650 0 Electronic digital computers|xCircuits|vCongresses
650 0 Integrated circuits|xVery large scale integration
|vCongresses
650 0 Computer engineering|vCongresses
710 2 IEEE Computer Society.|bDesign Automation Technical
Committee
710 2 IEEE Circuits and Systems Society
910 MARS
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Appendix ZHANG02

[Enhanced online resources and other COVID-19 updates »](#)



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336 #a text #2 rdacontent
337 #a computer #2 rdamedia
338 #a online resource #2 rdacarrier
506 #a License restrictions may limit access.
650 4 #a Integrated Circuits #x Very Large Scale Integration
650 4 #a Electronic Digital Computers #x Circuits
650 4 #a Computer Engineering
650 4 #a Microcomputers #x Design and Construction
652 4 #a Technology & Engineering #x Electronics #x Circuits #x Vlsi & Ulsi
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650 0 #a Electronic digital computers #x Circuits #v Congresses.
650 0 #a Integrated circuits #x Very large scale integration #v Congresses.
650 0 #a Computer engineering #v Congresses.
655 0 #a Electronic books.
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650 7 #a Electronic digital computers #x Circuits. #2 fast #0 (OCoLC)fst00907124
650 7 #a Integrated circuits #x Very large scale integration. #2 fast #0 (OCoLC)fst00975602
856 4 0 #3 Full text available from IEEE/IET Electronic Library (IEL) #i ssid=ssj0000451958; dbcode=RIE;
providercode=PRVIEE #u http://proxy.library.cornell.edu/login?
url=https://ieeexplore.ieee.org/servlet/opac?punumber=4973 #z Connect to text.
899 2 #a PRVIEE_RIE
948 2 #a 20180515 #b m #d batch #e lts
948 3 #a 20180515 #h SerialSolutions #i COO_360MARC_Update_20180514_monographs_changed.mrc.uc
948 0 #a 20170411 #b i #d batch #e lts
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Appendix ZHANG03



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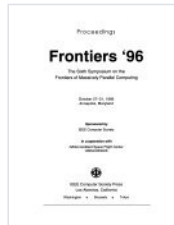
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246 3 0 a| Frontiers '96
260 a| Los Alamitos, Calif. : b| IEEE Computer Society Press, c| c1996.
300 a| xiv, 372 p. : b| ill. ; c| 28 cm.
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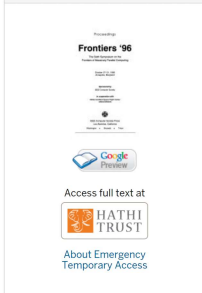
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