

CURRICULUM VITAE

Printed July 21, 2008

Michael A. Covington
Institute for Artificial Intelligence
The University of Georgia
Athens, Georgia 30602-7415

706 542-0358 (office)
706 549-4633 (home)
706 207-4262 (cell)
mc@uga.edu

1. **Academic History**

Michael A. Covington

Present rank: Senior Research Scientist
Adjunct Professor of Computer Science

Administrative title: Associate Director, AI Center

Graduate Faculty status: Full member since 1990

Highest degree: Ph.D., Yale University, 1982

Positions held: *The University of Georgia:*
Senior Research Scientist, since 2000.
Associate Research Scientist, 1990-2000.
Assistant Research Scientist, 1986-90.
Research Associate, 1984-86.

Affiliations with other units of The University of Georgia:
Senior Research Fellow, VIPCAT (Terrorism Project), 2007-2008.
Adjunct Professor of Computer Science, since 2001.
Adjunct Associate Professor of Computer Science, 1996-2001.
Adjunct Assistant Professor of Computer Science, 1988-1996.
Member of the Linguistics Faculty, since 1994.
Adjunct Member of the Linguistics Faculty, 1993-1994.
Adjunct Assistant Professor of Linguistics, 1988-92.
Adjunct Fellow, Institute of Behavioral Research, since 1988.

University of Southern California:
Postdoctoral Fellow in Linguistics, 1982–84.

Yale University:
Teaching Fellow, 1981.

Other employment: *University of Tübingen* (West Germany).
Research associate (Mitarbeiter), Seminar für natürlich–sprachliche Systeme, November 1987.
(Associated with LILOG Project, IBM Stuttgart.)

Personal data: Born 14 September 1957, Valdosta, Georgia.
U.S. citizen.
Married to Melody Mauldin Covington since 1982.
Two children, Catherine (born 1985) and Sharon (born 1988).

Degrees: B.A. 1977 summa cum laude, University of Georgia.
M.Phil. 1978, Cambridge University.
Ph.D. 1982, Yale University.

Languages: Full reading knowledge of Latin, Greek, French, Spanish, German.
Working knowledge of Italian, Biblical Hebrew.

Programming languages: Prolog, LISP, Pascal, Delphi, C, C++, C#, Java, PL/I, FORTRAN, BASIC, 8086/8088/80286 assembly, PIC assembly, 8051 assembly, 68HC11 assembly, many others.

2. Resident Instruction

Courses taught regularly: CSCI/ARTI 4540/6540
Artificial Intelligence Programming Techniques
(Symbolic Programming)
Every 2 years
CSCI/LING 8570
Natural Language Processing Techniques
Every year
LING 6570
Applied Natural Language Processing
As needed, formerly every 2 years
ENGR 4250
Advanced Microcontrollers
As needed in 2005 and 2006

3. Scholarly Activities

3a. Publications

* = publications with stringent editorial review
** = invited publications indicating scholarly recognition

Michael A. Covington is sole author of all publications unless otherwise indicated.

Books authored:

* *Syntactic theory in the High Middle Ages: modistic models of sentence structure*. Dissertation, Ph.D., Yale University, 1982. Published by Cambridge University Press, 1984.

Dictionary of computer terms, by Douglas Downing and Michael A. Covington. Woodbury, New York: Barron's Educational Series, 1986. Second edition, 1989.

Third edition, 1992.

Fourth edition, by Douglas Downing, Michael A. Covington, and Melody M. Covington, 1995.

Fifth edition, retitled *Dictionary of computer and Internet terms*, 1996.

Sixth edition, 1998.

Seventh edition, 2000.

Eighth edition, 2003.

Ninth edition, 2006.

* *Prolog programming in depth*, by M. Covington, D. Nute, and A. Vellino. Chicago: Scott, Foresman, 1988. Second edition published by Prentice-Hall, 1997.

Computer science study keys. Barron's Educational Series, 1991.

* *Natural language processing for Prolog programmers*. Prentice-Hall, 1993.

Chapters in books:

** Prospects for automated reasoning on the CYBERPLUS.

Proceedings from the 1985 Parallel Processing Executive Seminar, ed. Martin W. Ferrante. Minneapolis: Control Data Corporation, 1986.

** Universal grammar in the Middle Ages. In *Studies in the history of linguistic science: a festschrift for R. H. Robins*, ed. F. R. Palmer and Theodora Bynon, pp. 23–42. Cambridge University Press, 1986.

** Medieval scholastic grammar. *Oxford International Encyclopedia of Linguistics*. Oxford University Press, 1991.

** C. S. Lewis as a Student of Words. In: P. J. Schakel and C. A. Huttar, eds., *Word and Story in C. S. Lewis*, Columbia, Mo.: U. of Missouri Press, 1991, pp. 29–41.

* A dependency parser for variable-word-order languages. *Computer assisted modeling on the IBM 3090: The 1989 IBM contest prize papers*, ed. Keith R. Billingsley, Hilton U. Brown III, and Ed Derohanes, vol. 2, 799–845. Athens, Georgia: Baldwin Press, 1992.

* GB theory as dependency grammar. *Proceedings, International Congress of Linguists, Québec*, 1992.

* Toward a new type of language for electronic commerce. *Proceedings, Hawaii International Conference on System Sciences*, 1996.

* Speech acts in electronic commerce, with special reference to KQML and ANSI X.12. Proceedings, Hawaii International Conference on System Sciences, 1997.

* Defeasible logic on an embedded microcontroller. Proceedings, IEA-AIE, 1997.

* Alignment of multiple languages for historical comparison. Proceedings, ACL/COLING-98, Montréal.

A 700-year-old argument for a syntactic transformation. Published in the online festschrift for Noam Chomsky's 70th birthday, organized by MIT Press, at <http://mitpress.mit.edu/chomskydisc/Covington.html>. (No printed edition.)

* A fundamental algorithm for dependency parsing. Proceedings, SEACM 2001.

** *Scientia sermocinalis: Grammar in medieval classifications of the sciences*. In *Flores Grammaticæ: Essays in Memory of Vivien Law*, ed. by Nicola McLelland and Andrew Linn, pp. 49-54. Münster: Nodus, 2005.

** The technological relevance of natural language pragmatics. In *Cognitive Systems: Human Cognitive Models in Systems Design*, ed. by Michael L. Bernard and J. Chris Forsythe. Hillsdale, N.J.: Erlbaum, 2005.

** Electronics. Invited contribution to *Encyclopaedia Britannica Yearbook of Science and the Future*, 2000.

Monographs: * *Evidence for lexicalism: a critical review*. Bloomington, Indiana: Indiana University Linguistics Club, 1981.

- Journal articles:**
- * The syntactic theory of Thomas of Erfurt. *Linguistics* 17:465–496 (new series), 1979.
 - * Albert Schultens on language relationship. *Linguistics* 17:707–708 (new series), 1979.
 - * De modis significandi: introductio brevis in grammaticam speculativam medii aevi. *Latinitas* 28:185–191, 1980.
 - * Computer terminology: words for new meanings. *American Speech* 56:64–71, 1981.
 - * Antialiasing on the IBM PS/2 VGA by treating color bits as subpixels. *Journal of Microcomputer Applications* 12 (1989), 253–257.
 - * Parsing discontinuous constituents in dependency grammar. *Computational Linguistics* 16:234–236 (1990).
 - * Unification-based diagnosis of language learners' syntax errors, by M. Covington and K. Weinrich. *Literary and Linguistic Computing* 6 (1991) 149–154. (Co-author is student of candidate.)
 - * Efficient Prolog: a practical tutorial. *Artificial Intelligence Review* 5 (1991) 273–287.

- * The Master of Science in Artificial Intelligence program at the University of Georgia, by W. D. Potter, D. E. Nute, and M. A. Covington. *Expert Systems with Applications* 4:185–193 (1992).
- * Computer languages in type. *Journal of Scholarly Publishing* 26.1:34–41 (1994).
- * Design and implementation of a campus computer ethics policy. *Internet Research* 5.4 (1995) 31–41.
- * An algorithm to align words for historical comparison. *Computational Linguistics* 22:481–496 (1996).
- * Natural language plurals in logic programming queries. *Applied Artificial Intelligence* 11:219–234 (1996).
- ** On designing a language for electronic commerce. *International Journal of Electronic Commerce* 1.4:31–47 (1997).
- ** Speech acts, electronic commerce, and KQML. *Decision Support Systems* 22:203–211 (1998).
- * Defeasible Logic on an embedded microcontroller. *Applied Intelligence* 13:259–264 (2000).
- * Logical control of an elevator with defeasible logic. *IEEE Transactions on Automatic Control* 45:1347–1349.
- * The number of distinct alignments of two strings. *Journal of Quantitative Linguistics* 11:173–182 (2004).
- * Covington, Michael A.; Brown, Cati; He, Congzhou; Naçi, Lorina; Fjordbak, Bess Sirmon; Brown, John (2005) Schizophrenia and the structure of language: the linguist’s view. *Schizophrenia Research* 77(1):85–98.
- * Covington, Michael A.; Riedel, Wim J.; Brown, Cati; He, Congzhou; Morris, Eric; Weinstein, Sara; Semple, James; and Brown, John (2007) Does ketamine mimic aspects of schizophrenic speech? *Journal of Psychopharmacology* 21:338–346.
- * Brown, Cati; Snodgrass, Tony; Kemper, Susan J.; Herman, Ruth; and Covington, Michael A. (2007) Automatic measurement of propositional idea density from part-of-speech tagging. *Behavior Research Methods* 40(2):540–545.
- * Covington, Michael A.; Riedel, Wim J.; Brown, Cati; He, Congzhou; Morris, Eric; Weinstein, Sara; Semple, James; and Brown, John (2008) Ketamine and schizophrenic speech: more difference than originally reported. *Journal of Psychopharmacology* (in press).

Technical reports: (Highlights and most recent items.)

Covington, Michael A. (1984) Eliminating unwanted loops in Prolog. ACMC Research Report 01–0001. Advanced Computational Methods Center, University of Georgia.

- Covington, Michael A., and Nute, Donald (1986) Implicature, disjunction, and non-monotonic logic. ACMC Research Report 01-0015. Advanced Computational Methods Center, University of Georgia.
- Covington, Michael A. (1989) Efficient Prolog: a practical guide. Research report AI-1989-08, Artificial Intelligence Programs, University of Georgia.
- Covington, Michael A. (1990) A dependency parser for variable-word-order languages. Research report AI-1990-01, Artificial Intelligence Programs, University of Georgia.
- Covington, Michael A. (1994) An empirically motivated reinterpretation of dependency grammar. Research Report AI-1994-01, Artificial Intelligence Programs, The University of Georgia.
- Covington, Michael A. (1994) GULP 3.1: An extension of Prolog for unification-based grammar. Research Report AI-1994-06, Artificial Intelligence Center, The University of Georgia.
- Covington, Michael A. (2003) ET the Efficient Tokenizer. ProNTo project (<http://www.ai.uga.edu/mc/pronto>), Artificial Intelligence Center, The University of Georgia.
- Covington, Michael A. (2003) A Free-Word-Order Dependency Parser in Prolog. ProNTo project (<http://www.ai.uga.edu/mc/pronto>), Artificial Intelligence Center, The University of Georgia.
- Covington, Michael A.; He, Congzhou; Brown, Cati; Na ci, Lorina; and Brown, John (2006) How complex is that sentence? A proposed revision of the Rosenberg and Abbeduto D-Level Scale. Research Report 2006-01, CASPR Project, Artificial Intelligence Center, The University of Georgia.
- Covington, Michael A. (2007) CGI scripting in SWI-Prolog under Windows Server 2003. ProNTo project (<http://www.ai.uga.edu/mc/pronto>), Artificial Intelligence Center, The University of Georgia.
- Covington, Michael A., and McFall, Joe D. (2007) Using MontyLingua with C# and Microsoft .NET. Research Report 2007-02, CASPR Project, Artificial Intelligence Center, The University of Georgia.
- Covington, Michael A. (2007) CPIDR 3 User Manual. CASPR Research Report 2007-03 (<http://www.ai.uga.edu/caspr>), Artificial Intelligence Center, The University of Georgia.
- Covington, Michael A. (2007) MATTR User Manual. CASPR Research Report 2007-05 (<http://www.ai.uga.edu/caspr>), Artificial Intelligence Center, The University of Georgia.

Abstracts: Brown, Cati; Covington, Michael A.; Semple, James; and Brown, John (2005) Reduced idea density in speech as an indicator of schizophrenia and ketamine intoxication. *Schizophrenia Bulletin* 31:187–188.

He, Congzhou; Covington, Michael A.; Semple, James; and Brown, John (2005) Some linguistic signs of ketamine-induced cognitive impairment. *Schizophrenia Bulletin* 31:511.

He, Congzhou; Weinstein, Sara; and Covington, Michael A. (2007) Using text analysis software in schizophrenia research. *Schizophrenia Bulletin* 33:522.

Book reviews: Numerous, mainly in *Language*. The following are specially invited reviews of major works:

** Review of K. Hale and S. J. Keyser, eds., *The view from Building 20* (containing Noam Chomsky’s famous “minimalist” essay). *Language* 70:802–807 (1994).

** Review of R. Hudson, *English Word Grammar*. *Language* 71:589–591 (1995).

Other publications: *Over 300 articles in popular magazines about computers and electronics, 1984–present.*

Books about astronomical photography and amateur astronomy, 1985–present.

3b. **Other creative contributions**

Software: *AHED* and *PrEd*, full-screen editors for the IBM PC, used instructionally at Georgia and distributed as freeware.

GULP (Graph Unification Logic Programming), natural language processing software package described in several technical reports and used at the Universities of Georgia, Koblenz, Tübingen, and Zürich.

Hardware: “NOPPP” circuit for programming PIC16F84 and related microcontrollers. Cover feature, *Electronics Now Magazine*, September 1998; subsequently manufactured by Ramsey Electronics (New York) and Oatley Electronics (Australia).

3c. **Grants received**

(See also “Other services,” below, regarding additional contract work.)

GlaxoSmithKline Plc.

Contract of approximately \$1,400,000 spanning 3 years for research on computational analysis of speech, 2003-2007. (Amended in 2005 because of key personnel leaving GlaxoSmithKline.)

Hewlett-Packard Corporation.
Grant of approximately \$5,500 in equipment to support new microcontroller laboratory, 1999.

Byte Craft Limited (Waterloo, Ontario).
Grant of approximately \$750 in software to support new microcontroller laboratory and to explore possible future contracts, 1999.

Inprise Corporation (Borland International).
Grant of approximately \$600 in software to support new microcontroller laboratory, 1999.

National Science Foundation.
Grant IST-85-02477 to investigate computer modeling of discourse semantics (with Donald Nute), 1985–87 (\$239,181).

Control Data Corporation.
PACER fellowship to implement a logic programming system on a CYBERPLUS multiparallel processor, 1985–87 (\$50,000).

National Science Foundation.
Grant BNS-81-05359 to investigate medieval theories of syntax, 1981–82.

3d. **Recognitions and outstanding achievements**

- Awards:** ANBAR Electronic Intelligence.
Citation of Excellence (for paper on KQML), 1999.
Institute of Electrical and Electronic Engineers.
Elected Senior Member, 1996.
IBM Supercomputing Competition.
First prize, humanities and social sciences (\$25,000), with academic assistance award to University of Georgia (\$10,000).
National Science Foundation.
Graduate Fellowship, 1977–80.
Co-valedictorian, University of Georgia, 1977.
U. S. President's Australian Science Scholar, 1973.
- Recognitions:** Slated for listing in *Who's Who in America*, beginning 2009.
Listed in *Who's Who in Science and Engineering*, beginning 2000.
Listed in *Who's Who in the South and Southwest*, beginning 1995.
Listed in other similar directories.

3e. **Areas in which research is done**

Computational psycholinguistics
Information retrieval and extraction

Logic programming and logic modeling
Microcontroller applications
Computer security and ethics

3f. **Supervision of student research**

Theses directed: *M.S. in artificial intelligence:*
Martin Volk, 1988
Kevin Weinrich, 1989
Yih-Shiuan Hu, 1989
William H. Smith, Jr., 1989
Baizheng Li, 1991
Laurel Graham, 1994
Daniel Brown, 1994
Xun Shao, 1995
Mosé Chalom, 1998
Uli Bubenheimer, 1999
Vassilika Deltcheva, 2001
Nelson Rushton, 2001
Lorina Naçi, 2004
Matthew Voss, 2005
Joe McFall, 2007
Master of Applied Mathematical Sciences (M.A.M.S):
Scarlett Vandergrift, 1991
M.A. in English (linguistics specialty):
Salena Sampson, 2005
Ph.D. in linguistics:
Jishen He, 1993
Xilong Chen, 1993
So Young Kwon, 2006
Ph.D. in computer science:
Congzhou He, 2006

3g. **Editorship or editorial board memberships**

Contributing editor: *PC Tech Journal* (1985-1987).
PC Techniques (mid-1990s).
Electronics Now (1995-2001).

Reviewer for: Addison–Wesley
Allyn and Bacon
Arnold Publishers
Barron’s Educational Series
Behavior Research Methods
Brain and Language
Brown Publishing (Wm. C. Brown Company)
Cambridge University Press

Computational Linguistics
 Eastern States Conference on Linguistics
Expert Systems and Applications
 Howard W. Sams and Company
 IBM Supercomputing Competition
 IEEE Conference on Tools with Artificial Intelligence
 IEEE Supercomputing '90
IEEE Transactions on Systems, Man, and Cybernetics
International Journal of Computational Methods
Journal of Logic and Computation
Journal of Logic Programming
Language
Linguistic Inquiry
 National Science Foundation
 Oxford University Press
 Prentice–Hall
Research in Philosophy and Technology
 Scott, Foresman & Co.
 University of Georgia Press
 Wiley Publishing (John Wiley & Sons)
 (This list may not be complete.)

3h. **Convention papers and invited presentations**

(Complete only for the last 10 years.)

- * = papers with a published counterpart
- ** = invited presentations

* Toward a new type of language for electronic commerce. Hawaii International Conference on System Sciences, January 1996.

* Speech acts in electronic commerce, with special reference to KQML and ANSI X.12. Hawaii International Conference on System Sciences, January 1997.

* Design and implementation of a campus computer security policy. SHARE (IBM mainframe users' group), Atlanta, 1997.

** same, invited presentation, Valdosta State University, 1998.

** Comparative reconstruction of ancient languages by computer. University of South Carolina, 1997.

* Defeasible logic on an embedded microcontroller. IEA–AIE (Industrial and Engineering Applications of Artificial Intelligence and Expert Systems), Atlanta, 1997.

** same, invited presentation, Cambridge University, 1998.

** same, invited presentation, University of Arizona, 1999.

- * Alignment of multiple languages for historical comparison. COLING-98 (International Conference on Computational Linguistics), Montréal, 1998.
- ** same, invited presentation, University of Arizona, 1999.
- ** Natural language pragmatics applied to computing, invited presentation, Cambridge University, 2000.
- * A fundamental algorithm for dependency parsing. SEACM, Athens, Georgia, 2001.
- ** The technological relevance of natural language pragmatics. Invited presentation at Cognitive Systems Conference, sponsored by University of New Mexico and Sandia National Laboratories, Santa Fe, N.M., July 2003.
- * Covington, Michael A.; Brown, Cati; He, Congzhou; Naçi, Lorina; Fjordbak, Bess Sirmon; Brown, John. Schizophrenia and the structure of language: the linguist's view. SANE-POWIC Meeting on the Origins of Language and Psychosis, Oxford, July 2004.
- * He, Congzhou; Brown, Cati; Covington, Michael A.; and Naci, Lorina, How complex is that sentence? A proposed revision of the Rosenberg and Abbeduto D-Level scale, poster presented at the annual meeting of the Linguistic Society of America, Boston, January 2004.
- * Brown, Cati; Covington, Michael A.; Semple, James; and Brown, John, Reduced idea density in speech as an indicator of schizophrenia and ketamine intoxication, poster presented at the International Congress on Schizophrenia Research, Savannah, April 2005.
- * He, Congzhou; Covington, Michael A.; Semple, James; and Brown, John, Some linguistic signs of ketamine-induced cognitive impairment, poster presented at the International Congress on Schizophrenia Research, Savannah, April 2005.
- ** Can machines be polite? Invited presentation at Cognitive Systems Conference, sponsored by University of New Mexico and Sandia National Laboratories, Santa Fe, N.M., July 2005.
- * He, Congzhou; Weinstein, Sara; and Covington, Michael A. Speech analysis software for psychiatric research: the case of D-Level Rater. Poster, First Annual GA/SC Neuroscience Colloquium, Charleston, April 2006.
- * Brown, Cati; Snodgrass, Tony; Covington, Michael A.; Herman, Ruth; and Kemper, Susan J., Measuring propositional idea density through part-of-speech tagging. Poster, Linguistic Society of America Annual Meeting, Anaheim, California, January 2007.
- * He, Congzhou; Weinstein, Sara; and Covington, Michael A. Using Text Analysis Software in Schizophrenia Research. Poster,

International Congress on Schizophrenia Research (ICOSR),
Colorado Springs, March 2007.

* Covington, Michael A., and McFall, Joe D. The moving-average
type-token ratio (MATTR). Poster, Linguistic Society of America,
Chicago, January 2008.

3i. **Sessions chaired**

Session on syntax (in French), International Congress of Linguists,
Québec, 1992.

Session on syntax, Linguistic Society of America, Boston, 1994.

Session on dependency grammar, COLING-98, Montréal, 1998.

4. **Public service**

Member, ISO Prolog standards committee (WG17), since 1993.

5. **Other services**

Administration:

Managed the Artificial Intelligence Laboratory; supervised the
secretary (until 2005) and lab technicians (reduced role after 2005).

Computer security:

Chaired task force to develop and maintain computer ethics policy
for the University, 1993-1999.

Chaired Incident Handling Team to coordinate the University's
response to computer security incidents, 1993-1998.

Gave numerous presentations on computer security at local and
state meetings.

Contract research and development:

Supervised programming effort for an educational software project,
Cognitive Structures Diagnosis and Repair, designed by Bruce Britton
with funding from DARPA and President's Technology Initiative,
1995-1998.

Technical development relating to smart instrumentation for
Hewlett-Packard, summer 1999.

Natural language processing for an online encyclopedia of oak forest
management, USDA Forest Service, 2001-2003.

Departmental, college, or university committees:

Artificial Intelligence Admissions Committee, most years since 1986.

Franklin College Computer Committee, 1990- (currently inactive).

Campus Information Technology Forum ex officio, 1997- (inactive).

Linguistics Program Advisory Committee, 1997-2001.

Service to student groups and organizations:

None.

Service to support units of the University:

Assisted computer users at the University with various technical matters as needed.

Developed and supported L^AT_EX style sheets for University of Georgia theses and dissertations, 1992–present.

Revised thesis format regulations for the Graduate School, 1992.
