

CURRICULUM VITAE

Chutima Boonthum-Denecke

Associate Professor

Department of Computer Science

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Research Interests: Artificial Intelligence, Natural Language Processing, Applied Natural Language Processing, Computational Linguistics, Information Retrieval (IR), Intelligence in Information Assurance and CyberSecurity, Cognitive Robotics (CR), Assessment Tool and Feedback Systems, Intelligent Tutoring System, Web-Development & Technology, and Educational Games.

DEGREES

Degree	Discipline	Institution	Year
B.S.	Computer Science	Srinakharinwirot University, Bangkok, THAILAND	1997
M.S.	Applied Computer Science	Illinois State University, Illinois	2000
Ph.D.	Computer Science	Old Dominion University, Virginia	2007

EXPERIENCE:

Rank/Position	Department/Division	Institution/Organization	Period
Lecturer	Computer Science	Srinakharinwirot University Bangkok, THAILAND	1997–1998
Teaching Assistant	Applied Computer Science	Illinois State University	1998–2000
Graduate Research Assistant	Computer Science	Old Dominion University	2000–2002
Advising Assistant	Computer Science	Old Dominion University	2002–2006
Senior Research Assistant	Computer Science	Old Dominion University	2002–2006
Research Consultant	Computer Science	Old Dominion University	2006–2007
Visiting Research Scholar	Computer Science	Old Dominion University	2007–2010
Assistant Professor	Computer Science	Hampton University	2006–2013
Associate Professor	Computer Science	Hampton University	2013-

SUPPORT

External	Agency/Source	Amount	Period
Boonthum, C. (PI) SURF-2007	National Institute of Standards and Technology	\$ 21,598.00	Summer 2007
Boonthum, C. (Co-PI), & Zhu, W. (PI) HP Tablet in CE/CSC classroom	Hewlett Packard	\$ 68,000.00	2007-2009
Boonthum, C. (PI) ARTSI	National Science Foundation	\$ 125,667.00	2007-2010
Boonthum, C. (Co-PI), Muhammad, J. (PI) STARS-AE	National Science Foundation / The University of North Carolina, Charlotte	\$ 61,668.00	2008-2011
Boonthum, C. (PI) ARTSI-AE	National Science Foundation	\$ 892,288.00	2011-2013
Boonthum, C. (Co-PI) & Muhammad,	National Science Foundation /	\$ 103,085.00	2011-2016

External	Agency/Source	Amount	Period
J. (PI). STARS-Scaling Project	The University of North Carolina, Charlotte		
Boonthum, C. (PI) SURF-2012	National Institute of Standards and Technology	\$ 16,762.00	Summer 2012
Boonthum, C. (Co-PI), Hu, Y. (PI), & Muhammad, J. (Co-PI) CyberCorps SFS: HU GETS-IA	National Science Foundation	\$2.3M	2013-2017

PUBLICATIONS

Book (2)

McCarthy, P.M. & **Boonthum**, C. (Eds.). (Book Editors: October 2011) *Applied Natural Language Processing and content analysis: Identification, Investigation, and Resolution*. IGI Global.

Boonthum-Denecke, C., McCarthy, P.M. & Lamkin, T.A. (Book Editors: Release December 2011; Copyright 2012). *Cross-Disciplinary Advances in Applied Natural Language Processing: Issues and Approaches*. IGI Global.

Book Chapters (7)

Boonthum, C., Levinstein, I.B., & McNamara, D. S. (2006) Evaluating Self-Explanations in iSTART: Word Matching, Latent Semantic Analysis, and Topic Models. In A. Kao & S. Poteet (Eds.), *Text Mining and Natural Language Processing*, Springer. 91-106.

McNamara, D. S., **Boonthum**, C., Levinstein, I. B. & Millis, K. (2007). Evaluating Self-Explanations in iSTART: Comparing Word-based and LSA Systems. In T. Landauer, D. S. McNamara, S. Dennis, & W. Kintsch (Eds.), *LSA: A Road to Meaning*. Mahwah, NJ: Erlbaum. 227-241.

Boonthum, C., Wang, L., Olariu, S., and Zomaya, A. (2007). Wireless Networks: Opportunities for Infrastructure-related Optimization. *UNESCO-EOLSS* (Encyclopedia of Life Support Systems).

McNamara, D. S., O'Reilly, T., Rowe, M., **Boonthum**, C., & Levinstein, I. B. (2007). iSTART: A Web-Based Tutor that Teaches Self-Explanation and Metacognitive Reading Strategies. In D. S. McNamara (Ed.), *Reading Comprehension Strategies: Theories, Interventions, and Technologies*. 397-420.

Boonthum, C., Levinstein, I.B., McNamara, D.S., Magliano, J.P., and Millis, K.K. (2008). NLP Techniques in Intelligence Tutoring Systems. In J. Rabunal, J. Dorado, & A. Pazos (Eds), *Encyclopedia of Artificial Intelligence*. Idea Group Publishing: PA. 1253-1258.

Renner, A., McCarthy, P., **Boonthum-Denecke**, C., & McNamara, D.S. (2011). Maximizing ANLP Evaluation: Harmonizing Flawed Input. In P. McCarthy & C. Boonthum-Denecke(Eds), *Applied Natural Language Process: Identification, Investigation, and Resolution*. 438-456. IGI Global.

Brunelle, J.F. & **Boonthum-Denecke**, C. (2012). Natural Language Processing Tools. In C. Boonthum-Denecke, P. McCarthy, & T. Lamkin (Eds): *Cross-Disciplinary Advances in Applied Natural Language Processing: Issues and Approaches*. 9-23. IGI Global.

Journals (5)

McNamara, D. S. Levinstein, I. B. & **Boonthum**, C. (2004). iSTART: Interactive Strategy Trainer for Active Reading and Thinking. Submitted to *Behavioral Research Methods, Instruments, and Computers*, 36 (2), 222-233.

Boonthum, C., Levinstein, I.B., Olariu, S., Pigli, E., Shurkova, E., and Zomaya, A. Y. (2007). Mobile computing: Opportunities for optimization research. *Computer Communications* 30 (4), 670-684.

Levinstein, I.B., **Boonthum**, C., Pillarisetti, S.P., and McNamara, D.S. (2007). iSTART 2: Improvements for Efficiency and Effectiveness. *Behavior Research Methods Instruments and Computers*, 39 (2), 224-232.

- Gilliam, S., Magliano, J.P., Millis, K.K., Levinstein, I.B., and **Boonthum**, C. (2007). Assessing the format of the presentation of text in developing a Reading Strategy Assessment Tool (R-SAT). *Behavior Research Methods Instruments and Computers*, 39 (2), 199-204.
- Magliano, J.P., Millis, K.K., The R-SAT Development Team, Levinstein, I.B., and **Boonthum**, C. (2011). Assessing Comprehension Strategies and Performance with the Reading Strategies Assessment Tool (R-SAT). *Metacognition and Learning*, 6 (2), 131-154.
- Jackson, T.J., **Boonthum-Denecke**, C., & McNamara, D.S. (Submitted). Natural Language Processing and Game-based Practice in iSTART. Submitted for review to *Journal of Interactive Learning Research*.

Refereed Proceedings (28)

- Levinstein, I. B., McNamara, D. S., **Boonthum**, C., Pillarisetti, S. P., & Yadavalli, K. (2003). Web-Based Intervention for Higher-Order Reading Skills. *Proceeding of the ED-MEDIA 2003 World Conference on Educational Multimedia, Hypermedia & Telecommunications*, 835-841.
- Boonthum**, C. (2004). iSTART: Paraphrase Recognition. *Proceedings of the Student Research Workshop: ACL 2004. 42nd Annual Meeting of the Association of Computational Linguistics*, Barcelona, Spain. 31-36.
- Boonthum**, C., Toida, S., & Levinstein, I. B. (2005). Sense Disambiguation for Preposition ‘with’. *Proceedings of the Second ACL-SIGSEM Workshop on “The Linguistic Dimensions of Prepositions and their Use in Computational Linguistic Formalisms and Applications”*, University of Essex – Colchester, United Kingdom. 153-162.
- Boonthum**, C., Toida, S., & Levinstein, I. B. (2006) Preposition Senses: Generalized Disambiguation Model. Proceedings of the seventh International Conference on Computational Linguistics and Intelligent Text Processing (CICLing-2006), Lecture Notes in Computer Science, Springer Verlag GmbH. 196-207.
- Boonthum**, C., Levinstein, I.B., Olariu, E., & Zomaya, A. Y. (2006) Algorithmic Issues in Mobile Infrastructure-Based Communications. *Proceedings of the IASTED International Conference on Networks and Communication Systems (NCS-2006)*, Chiang Mai, Thailand.
- Boonthum**, C., Levinstein, I.B., Olariu, S., Wang, L., & Xu, Q. (2006) Assurance-aware Self-organization of Sensor Networks. *Proceedings of the IASTED International Conference on Networks and Communication Systems (NCS-2006)*, Chiang Mai, Thailand.
- Magliano, J.P., Gilliam, S., Millis, K.K., McNamara, D.S., Kurby, C., **Boonthum**, C. & Levinstein, I.B. (2008). Automating reading strategy training and assessment. *Proceedings of the 18th Annual Conference of the Society for Text and Discourse*, 2008, Memphis, TN.
- Williams, A.B., Touretzky, D.S, Tira-Thompson, E.J., Manning, L., **Boonthum**, C., & Allen, C.S. (2008) Introducing an Experimental Cognitive Robotics Curriculum at Historically Black Colleges. *The ACM Special Interest Group on Computer Science Education (SIGCSE-2008)*.
- Williams, A.B., Touretzky, D.S., Manning, L., Walker, J.J., **Boonthum**, C., Forbes, J., and Doswell, J.T. (2008) The ARTSI Alliance: Recruiting Underrepresented Students to Computer Science and Robotics to Improve Society. *The Association for the Advancement of Artificial Intelligence (AAAI-2008) Spring Symposia*.
- Brunelle, J.F., Levinstein, I.B., & **Boonthum**, C. (2009). MiBoard: Metacognitive Training Through Gaming in iSTART. In C.M. Bank & K.L. Lawsure (Eds.) *Proceedings, VMASC Old Dominion University 2009 Student Capstone Conference*, VMAS Center, Suffolk, VA.
- McNamara, D.S., **Boonthum**, C., Kurby, C.A., Magliano, J.P., Pillarisetti, S., & Bellissens, C. (2009). Interactive Paraphrase Training: The Development and Testing of an iSTART Module. In V. Dimitrova, R. Mizoguchi, B. du Boulay, & A.C. Graesser (Eds.), *Artificial intelligence in education; Building learning systems that care; From knowledge representation to affective modeling* (pp. 181-188). Amsterdam, The Netherlands: IOS Press.
- Renner, A. M., McCarthy, P. M., **Boonthum**, C., & McNamara, D. S. (2009). Spelling mistakes and typos: Can your ITS handle them? In P. Dessus, S. Trausan-Matu, P. van Rosmalen, & F. Wild (Eds.), *Proceedings of the Workshop on Natural Language Processing in Support of Learning; Metrics, Feedback, & Connectivity at the 14th International Conference on Artificial Intelligence in Education*(pp. 26-33). Brighton, UK: AIED.

- Jackson, T.G., **Boonthum**, C., & McNamara, D.S. (2009). iSTART-ME: Situating extended learning within a game-based environment. In H.C. Lane, A. Ogan, & V. Shute (Eds.), *Proceedings of the Workshop on Intelligent Educational Games at the 14th Annual Conference on Artificial Intelligence in Education* (pp. 59-68). Brighton, UK: AIED.
- Dempsey, K.B., Brunelle, J.F, Jackson, T.G., **Boonthum**, C., Levinstein, I.B., & McNamara, D.S. (2009). MiBoard: Multiplayer Interactive Board Game. In H.C. Lane, A. Ogan, & V. Shute (Eds.), *Proceedings of the Workshop on Intelligent Educational Games at the 14th Annual Conference on Artificial Intelligence in Education* (pp. 113-116). Brighton, UK: AIED.
- Brunelle, J.B., Jackson, T.G., Dempsey, K.B., **Boonthum**, C., Levinstein, I.B., & McNamara, D.S. (2010). Analysis of MiBoard as an iSTART Practice Tool. In the *Proceedings of the 23rd International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 240-285. Menlo Park, CA: The AAAI Press.
- Malladi, R. Levinstein, I.B., **Boonthum**, C., & Magliano, J. P. (2010). Summarization: Constructing an Ideal Summary and Evaluating a Student's Summary using LSA. In H.W. Guesgen & R.C. Murray, *Proceedings of the 23rd International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 295-296. Menlo Park, CA: The AAAI Press.
- Mylavarapu, S., Levinstein, I.B., **Boonthum**, C., Magliano, J.P., & Millis, K.K. (2010). Enhancing Protocol Evaluation Through Semantic Modification of Benchmarks. In H.W. Guesgen & R.C. Murray, *Proceedings of the 23rd International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 297-298. Menlo Park, CA: The AAAI Press.
- Jackson, G.T., **Boonthum**, C., & McNamara, D.S. (2010). The Efficacy of Extended Practice with iSTART: Low Ability Students Catch up. In V. Aleven, J. Kay, & J. Mostow, *Intelligent Tutoring Systems, 10th International Conference*. 349-351. Springer.
- Boonthum-Denecke**, C., McCarthy, P.M., Lamkin, T., Jackson, G.T., Magliano, J.P., & McNamara, D.S. (2011). Automatic Natural Language Processing and the Detection of Reading Skills and Reading Comprehension. In R. Charles Murray, Philip M. McCarthy (Eds.): *Proceeding of the 24th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 234-239. Menlo Park, CA: The AAAI.
- Boonthum-Denecke**, C., Touretzky, D., Jones, E., Humphries, T., & Caldwell, R. (2011). The ARTSI Alliance: Using Robotics and AI to Recruit African-Americans to Computer Science Research. In R. Charles Murray, Philip M. McCarthy (Eds.): *Proceeding of the 24th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 579-584. Menlo Park, CA: The AAAI.
- Brhane, M. & **Boonthum-Denecke**, C. (2011). Using Latent Semantic Analysis and Word Matching Enhance Bridging Reading Strategy Identification. In R. Charles Murray, Philip M. McCarthy (Eds.): *Proceeding of the 24th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 341-342. Menlo Park, CA: The AAAI.
- Burns, H. & **Boonthum-Denecke**, C. (2011) SnackBot: Vision and Perception with Video and Audio Captures using GStreamer. In R. Charles Murray, Philip M. McCarthy (Eds.): *Proceedings of the 24th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 597-598. Menlo Park, CA: The AAAI.
- Jackson, G.T., **Boonthum-Denecke**, C., & McNamara, D.S. (2012). A Comparison of Gains between Educational Games and a Traditional ITS. In Philip M. McCarthy, Michael Youngblood (Eds.): *Proceedings of the 25th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 444-449. Menlo Park, CA: The AAAI.
- Gregory, J., Howard, A., & **Boonthum-Denecke**, C. (2012). Wii Nunchuk Controlled Dance Pleo! Dance! to Assist Children with Cerebral Palsy by Play Therapy. In Philip M. McCarthy, Michael Youngblood (Eds.): *Proceedings of the 25th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 517-520. Menlo Park, CA: The AAAI.
- Jobe, E., McLurkin, J., & **Boonthum-Denecke**, C. (2012). R-one Swarm Robot: Developing the Accelerometer and Gyroscope. In Philip M. McCarthy, Michael Youngblood (Eds.): *Proceedings of the 25th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 521-523. Menlo Park, CA: The AAAI.

- Johnson, E., Olson, E., & **Boonthum-Denecke**, C. (2012). Robot Localization Using Overhead Camera and LEDs. In Philip M. McCarthy, Michael Youngblood (Eds.): *Proceedings of the 25th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 524-526. Menlo Park, CA: The AAAI.
- Moon, D., Rybski, P., Swancier, C., & **Boonthum-Denecke**, C. (2012). Snackbot: The Process to Engage in Human-Robot Conversation. In Philip M. McCarthy, Michael Youngblood (Eds.): *Proceedings of the 25th International Florida Artificial Intelligence Research Society (FLAIRS) Conference*, 527-529. Menlo Park, CA: The AAAI.
- Burns, Hasai & **Boonthum-Denecke**, C. (In Press, 2013) Exploring the Performance of the iRobot Create for Object Relocation in Outer Space. To be in Proceedings of the 26th International Florida Artificial Intelligence Research Society (FLAIRS) Conference.

HONORS/AWARDS:

Honor / Award	Institution/Organization	Year
Academic Excellence Award – School of Science	Hampton University	2012
Virginia Outstanding Faculty Award - Rising Star 2009 Nominee from Hampton University	State Council of Higher Education for Virginia	2009
ACL 2004, Travel Scholarship	Association for Computational Linguistics	July 2004
Outstanding Graduate Assistant	Computer Science Department, College of Sciences, Old Dominion University, Norfolk, VA 23529	2004
ACS Distinguished Graduate Student	Applied Computer Science Department, Illinois State University, Normal, IL 61790	2000

RESEARCH PROJECTS

ARTSI: Advancing Robotics Technology for Social Impact. A community of predominantly African American robotics and computer science faculty will create the *ARTSI Alliance* to increase the participation of African Americans in robotics computing, through attractive, interdisciplinary collaborative robotics educational and research projects that aim at improve society in areas such as health, the arts, and entrepreneurship. The *ARTSI* (Advancing Robotics Technology for Societal Impact) *Alliance* includes faculty at **HBCUs** (Spelman, Florida A&M, University of the District of Columbia, Hampton, Morgan State, Norfolk State, Winston-Salem State, and University of Arkansas-Pine Bluff), **Research I (R1) Universities** (Carnegie Mellon, Georgia Tech, Brown, Duke, University of Alabama, University of Washington, and University of Pittsburgh), **Industry partners** (Seagate, iRobot, Microsoft Research, and Juxtopia), and **Educational Partners** (Florida-Georgia Louis Stokes Alliance for Minority Participation and Computer Science Teachers Association). (NSF Award Number# CNS-0742089 and 104246, PI: Chutima Boonthum).

STARS: Student and Technology for Academia, Research, and Service. To Broaden participation in computing for traditionally under-represented student populations through STARS Leadership Corps (SLC), Pair Programming, Mentoring Model, Teaching Math to the Visually Impaired, Computing Education for Students with Learning Disabilities, Information Concerning Learning Disabilities Related Links, AARCS: African Americans in Research in Computer Science, Marketing and Dissemination. (NSF Award to Teresa Dalberg, UNC Charlotte. A subcontract to Hampton University, PI Jean Muhammad, Co-PI/Academic Liaison: Chutima Boonthum)