

Curriculum Vitae

Amy K. Hoover
Department of EE and Computer Science
University of Central Florida

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EDUCATION

Ph.D. Computer Science University of Central Florida, In Progress
Advisor: Kenneth O. Stanley, Department of Electrical Engineering and Computer Science.

B.S. Computer Science, with University Honors University of Central Florida, 2009
Honors Thesis: NEAT Drummer: Computer-Generated Drum Tracks
Advisor: Kenneth O. Stanley, Department of Electrical Engineering and Computer Science.

B.S. Mathematics, with University Honors University of Central Florida, 2009

FELLOWSHIPS

National Science Foundation Graduate Research Fellowship (2010)
Awarded: \$90,000

University of Central Florida Trustees Doctoral Fellowship (2009)
Awarded: \$36,000

GRANTS AND FUNDING

Significant Contribution to Funded Proposal. National Science Foundation (NSF), CreativeIT Program, "Pilot: Assisted Musical Composition through Functional Scaffolding," August 2010 - August 2013, \$295,229. (PI Kenneth O. Stanley)

PUBLICATIONS

Amy K. Hoover, Paul A. Szerlip, and Kenneth O. Stanley. "Interactively Evolving Harmonies through Functional Scaffolding." *In Proceedings of the Genetic and Evolutionary Computation Conference (GECCO-2011)* (The Association for Computing Machinery, New York, NY, 2011).
Acceptance Rate: 38%

Winner of the Best Paper Award in the Digital Entertainment Technologies and Arts (out of 22 submissions).

Amy K. Hoover, Paul A. Szerlip, and Kenneth O. Stanley. "Generating Musical Accompaniment through Functional Scaffolding." *In Proceedings of the Eighth Sound and Music Computing Conference (SMC 2011)* (2011).
Acceptance Rate: 25% accepted for oral presentations.

Amy K. Hoover and Kenneth O. Stanley. "Exploiting Functional Relationships in Musical Composition." *Connection Science Special Issue on Music, Brain, & Cognition* **21**, 227–251 (2009).

Amy K. Hoover, Michael P. Rosario, and Kenneth O. Stanley. "Scaffolding for Interactively Evolving Novel Drum Tracks for Existing Songs." *In Mario Giacobini et. al. (Editor), Proceedings of the Sixth European Workshop on Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMUSART 2008)*, pp. 412–422 (Springer, 2008).
Acceptance Rate: 32%

Winner of the Best Paper Award.
(out of 31 submissions).

HONORS AND AWARDS

- Dean's Presentation Award** University of Central Florida, Graduate Studies, for outstanding accomplishments and exemplary contribution to the graduate fellowship community (2011)
- Best Paper Award in Digital Entertainment Technologies and Arts (out of 21)** *Genetic and Evolutionary Computation Conference* (GECCO-2011, Dublin, Ireland) for Interactively Evolving Harmonies through Functional Scaffolding
- Scholarship Funded by the National Science Foundation** Grace Hopper Celebration of Women in Computing (2010, Atlanta, GA)
- Scholarship Funded By Upsilon Pi Epsilon** Jim Nolen Scholarship (2009)
- Best Undergraduate Student Award in Computer Science** University of Central Florida, School of Electrical Engineering and Computer Science (2009)
- Nominated for Order of the Pegasus** University of Central Florida, School of Electrical Engineering and Computer Science (2008)
- First Place at the Showcase of Undergraduate Research Excellence** University of Central Florida in the Physical Sciences, Mathematics, Computer Science and Engineering category (out of 30)
- Best Paper Award in Evolutionary Music and Art (out of 31)** *Sixth European Workshop on Evolutionary and Biologically Inspired Music, Sound, Art and Design* (EvoMUSART-2008, Naples, Italy), for Scaffolding for Interactively Evolving Novel Drum Tracks for Existing Songs.

CONFERENCE, WORKSHOP, AND INVITED PRESENTATIONS

- "Composing Music with Functional Scaffolding". **Invited Speaker for the LEARN Academic Series**, Orlando, FL, January 26, 2012.
- "Interactive Evolution, Creativity, and You: Exploring Creativity through Computer Science". **Distinguished Speaker at the Burnett Honors College Summer Institute (BHCSI-2011)**, Orlando, FL, July 20, 2011.
- "Functional Scaffolding: A New Principle for Enabling Computational Creativity in Music". **Invited Fellow at the Exploring the Mind through Music Conference (EMM-2011)**, Houston, TX, June 16, 2011.
- "Functional Scaffolding for Musical Composition". Workshop in Algorithmic Music Composition (WACM-2010), Santa Cruz, CA, July 5, 2010.
- "NEAT Drummer: Computer-Generated Drum Tracks". **Invited Speaker for the UCF Music Forum**, Orlando, FL, February 19, 2009.

RESEARCH EXPERIENCE

- Graduate Researcher.** University of Central Florida, 2009-present
Advisor: Dr. Kenneth O. Stanley, Department of Electrical Engineering and Computer Science.
- Undergraduate Honors Thesis.** University of Central Florida, 2008
Title: NEAT Drummer: Computer-Generated Drum Tracks
Advisor: Dr. Kenneth O. Stanley, Department of Electrical Engineering and Computer Science.
- Undergraduate Researcher.** University of Central Florida, 2007-2009
Advisor: Dr. Kenneth O. Stanley, Department of Electrical Engineering and Computer Science.
- NSF REU in Machine Learning.** University of Central Florida, 2007
NEAT Drummer: Interactive Evolutionary Computation for Drum Pattern Generation
Advisors: Dr. Kenneth O. Stanley, Dr. Michael Georgiopoulos, Department of Electrical Engineering and Computer Science.

Undergraduate Lab Assistant. University of Central Florida, 2004-2005
Isolated DNA, sequenced *Agkistrodon piscivorus* (cottonmouth) mitochondrial DNA
Advisor: Dr. Christopher L. Parkinson, Department of Biology.

PATENTS PENDING

Pending. Amy K. Hoover, Michael Rosario, and Kenneth O. Stanley (Patent Pending since July, 2008).
System and Method for Evolving Music Tracks. University of Central Florida

STUDENT SUPERVISED

Ricardo Angeli since 10/21/11 through the Learning Environment and Academic Research Network (LEARN):
A Model for Retention in the STEM Disciplines program

ACADEMIC SERVICE

1st International Conference on Evolutionary and Biologically Inspired Music, Sound, Art and Design
(EvoMUSART-2012)

Transactions on Computational Intelligence and AI in Games (2011)

Genetic and Evolutionary Computation Conference (GECCO-2011)

9th European Event on Evolutionary and Biologically Inspired Music, Sound, Art and Design
(EvoMUSART-2010)

8th European Event on Evolutionary and Biologically Inspired Music, Sound, Art and Design
(EvoMUSART-2009)

TEACHING EXPERIENCE

Graduate Teaching Assistant. University of Central Florida, 2010
Course: Introduction to Artificial Intelligence and Neuroevolution
Designed and taught a course on artificial intelligence to specially selected high school students in the
Burnett Honors College Summer Institute
Instructor: Arup Guha, Department of Electrical Engineering and Computer Science.

Undergraduate Teaching Assistant. University of Central Florida, 2008
Course: Introduction to Artificial Intelligence and Neuroevolution
Designed and taught a course on artificial intelligence to specially selected high school students in the
Burnett Honors College Summer Institute
Instructor: Arup Guha, Department of Electrical Engineering and Computer Science.

Undergraduate Teaching Assistant. University of Central Florida, 2007
Course: Intermediate Java
Instructor: Arup Guha, Department of Electrical Engineering and Computer Science.

Mathlab Tutor. University of Central Florida, 2004-2006
Tutored students in the following subject areas: Finite Mathematics, Trigonometry, Geometry, College
Algebra, Calculus, Differential Equations

POSTER COMPETITIONS

Showcase of Undergraduate Research Excellence. University of Central Florida, 2008
Title: Automatically Generating Drum Tracks for Existing Songs with a Computer
Advisor: Kenneth O. Stanley, Department of Electrical Engineering and Computer Science.
1st place in Physical Sciences, Mathematics, Computer Science and Engineering.
(out of 30 submissions)

Showcase of Undergraduate Research Excellence. University of Central Florida, 2005
Title: Snake Mitochondrial Genomics
Faculty Lab Advisor: Christopher L. Parkinson, Department of Biology.

PROFESSIONAL MEMBERSHIPS

Women in Electrical Engineering and Computer Science. University of Central Florida, 2008 - present

Evolutionary Complexity Lab. University of Central Florida, 2007-present

Association of Computing Machinery. University of Central Florida, 2007 - 2009
Position: ACM at UCF President 2007-2008

Upsilon Pi Epsilon: International Honor Society for the Computing and Information Disciplines
University of Central Florida, 2007 - present
Position: Secretary 2009, 2010
Position: Vice President 2011
Position: President 2012