

Michael Hewner

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INTERESTS Computer Science Education and Computer Science Education Research

EDUCATION **Georgia Tech**, Atlanta, Georgia

Ph.D., Human-Centered Computing, (anticipated) December 2012

- Area of Study: Computer Science Education
- Dissertation Topic: *Student Conceptions About the Field of Computer Science*
- Dissertation Proposal Accepted January 2010
- Adviser: Professor Mark Guzdial
- Higher Education Teaching Certificate Level A

University of Illinois at Urbana-Champaign, Urbana, Illinois

M.S., Computer Science, May 2003

- Area of Study: Software Engineering, Object-Oriented Programming
- Thesis Topic: *Implementing the Tagged Integer Optimization on the .NET Virtual Machine*
- Adviser: Professor Ralph Johnson

B.S., Computer Science, December 2001

INSTRUCTOR OF RECORD

Duke University, Durham, North Carolina

Visiting Instructor

Fall 2011 – Spring 2012

CompSci 100: Data Structures (undergraduate course)

- Topics: algorithm design, objects, recursion, linked-lists, trees
- Lecture-based course with programming assignments and exams
- Taught 150+ students with another instructor in Fall, taught alone in Spring
- Developed lectures, wrote exams

CompSci 108: Software Engineering (undergraduate course)

- Topics: object-oriented design, programming large systems
- Project-oriented course, but also regular lectures
- Taught 40+ students, with another instructor in Fall, taught alone in Spring
- Developed lectures, developed projects and grading criteria

CompSci 149S: Problem Solving Seminar (graduate/undergraduate course)

- Topics: programming for programming competitions, algorithms
- Taught 10 students
- Used various styles including mini-lectures, discussions, in-class scrimmages
- Team won 1st Place in ACM ICPC Regionals and will compete in Internationals in the Spring

University of Washington, Seattle, Washington

Visiting Instructor

Summer 2008

CSE143: Computer Programming II (undergraduate course)

- Topics: algorithm design, objects, recursion, linked-lists, trees
- Taught 80+ students
- Developed lectures, exams, managed TAs

OTHER TEACHING EXPERIENCE **Georgia Tech**, Atlanta, Georgia

Student Mentor (unofficial Teaching Assistant)

Fall 2010

CS 6452: Rapid Prototyping (graduate course)

- Topics: Jython, GUI frameworks, networking, OO-design, databases
- 15 students
- Taught 2 lectures: Python Fundamentals and Databases
- Held regular office hours, responded to student emails

Teaching Practicum

Fall 2009

CS 2110: Computer Organization and Programming (sophomore course)

- Topics: processor architecture, assembly language, C
- 80+ students
- Taught guest lectures on Logic Gates, Memory Mapped IO, and The Stack/Malloc
- Observed classes, TA recitations, and met weekly with teacher and TAs to discuss teaching

Governor's Honors Program, Valdosta, Georgia

A competitive 4-week summer program for high school juniors sponsored by the state of Georgia

Instructor

Summer 2011

Introductory Delphi Programming (high school course)

- Topics: variables, functions, GUIs, Monte Carlo simulations, complex math
- 20 students

Intro to Automata Theory (high school course)

- Topics: different types of automata, incomputability, Turing-Church Thesis
- 15 students

Fractals (high school course)

- Topics: Iterated function systems, fractal dimension, chaos
- 15 students

Math Lab Tech and Volunteer Instructor

Summer 2010

Introductory Delphi Programming (high school course)

- Topics: variables, functions, GUIs, Monte Carlo simulations, complex math
- Taught 40 students (2 sections) per day with instructor supervision

University of Illinois, Urbana, Illinois

Teaching Assistant

Spring 2002–Spring 2003

Software Engineering I and II (mixed graduate/undergraduate course)

- Topics: software processes, UML, object-oriented design, project management, software tools
- TA for 80+ students
- Held regular office hours, managed student project work
- Developed and graded homeworks and exams
- Led other TAs

GUEST LECTURES

- Technology and Society Class: Privacy and Anonymity (November 2011)
- Introductory Data Structures Class: Simulations (April 2011)
- CS TA Training Class: Educational Objectives (April 2010)
- CS TA Training Class: Active Learning (April 2010)
- Educational Technology Class: Identity and CS Education (November 2009)
- Educational Technology Class: Resnick and Distributed Thinking (February 2009)

HIGH SCHOOL OUTREACH

Mini-courses

- High School Mentor Training: Three Lectures on the Subfields of CS and Student Goals (Spring 2010)

Class Presentations

- High School Presentation: Careers in Video Game Programming (August 2010 and February 2011)
- High School Presentation: Subfields of CS (Fall 2008)

Student Mentoring

- Mentored a high school team doing a project entitled “Using an Intermediate Neural Network to Optimize Parameters in Backpropagation Neural Networks” for the Siemens Science Fair Competition (Fall 2011)
- Tutored math at Rainier Beach High School (Fall 2006)
- Mentored high school students as part of Community for Youth program (Fall 2004—Fall 2006)

PUBLICATIONS

M. Hewner and M. Guzdial. *How CS majors select a specialization.* presented at Seventh International Computing Education Research Workshop (ICER 2011). Providence, RI USA, August 8-9, 2011.

M. Hewner and M. Guzdial. *What Game Developers Look for in a New Graduate: Interviews and Surveys at One Game Company.* presented at ACM Technical Symposium on Computer Science Education (SIGCSE 2010). Milwaukee, WI USA, March 10-13, 2010.

A. Bruckman, M. Biggers, B. Ericson, T. McKiln, J. Dimond, B. DiSalvo, M. Hewner, L. Ni, S. Yardi. *‘Georgia computes!’: improving the computing education pipeline.* presented at ACM Technical Symposium on Computer Science Education (SIGCSE 2009). Chattanooga, TN USA, March 4-7, 2009.

M. Hewner and M. Knobelsdorf. *Understanding Computing Stereotypes with Self-Categorization Theory.* presented at Koli Calling International Conference on Computer Science Education (Koli Calling 2008). Koli National Park, Finland, November 13 - 16, 2008.

M. Hewner and M. Guzdial. *Attitudes about Computing in Postsecondary Graduates.* presented at Fourth International Computing Education Research Workshop (ICER 2008). Sydney, Australia, September 6-7 2008.

INDUSTRY EXPERIENCE

Zipper Interactive, Seattle, Wahington

Video Game Programmer

May 2009–August 2009

- Programmed C++ for two Playstation 3 first person shooter titles
- Interviewed developers about what they for in a programmer hire

Amazon.com, Seattle, Wahington

Software Engineer

June 2003–June 2006, January 2007–July 2007

- Technical Lead for a 7 person team, coded many projects in C++ and Perl
- Promoted after 1.5 years to SDE II
- Developed “Ninja Coder” programming riddle project to attract job candidates
- Interviewed 100+ developer candidates

Progressive Insurance, Cleveland, Ohio

Developer Intern

Summer 2002, Summer 2001

- Programmed Smalltalk for insurance rate setting system
- Programmed Visual Basic for Progressive website

National Center for Supercomputing Applications, Urbana, Illinois

Student Programmer

December 1999–September 2000

- Worked on Java system for predicting molecular structure
- Programmed system for atom categorization

SERVICE

- Session Chair for SIGCSE 2012
- Coach of Duke Programming Competition Team (Fall 2011 – Spring 2012)
- Student representative on HCC Ph.D. Procedure Review Committee (Spring 2011)
- Paper reviewer for SIGCSE and TOCE

REFERENCES

Mark Guzdial

Email: guzdial@cc.gatech.edu; Phone: 404-894-5618

- Professor, Georgia Tech
- ◇ *Dissertation adviser*

Owen Astrachan

Email: ola@cs.duke.edu; Phone: (919) 660-6522

- Professor of the Practice, Duke University
- ◇ *Co-Instructor in Data Structures Course*

Sally Fincher

Email: s.a.fischer@kent.ac.uk; Phone: +44 (0)1227 824061

- Professor, University of Kent
- ◇ *Can speak to my qualifications as a CS Education Researcher*

Keith Edwards

Email: keith@cc.gatech.edu; Phone: 404-385-6783

- Professor, Georgia Tech
- ◇ *Observed my teaching/student interactions in the Rapid Prototyping course, Dissertation committee member*

Ralph Johnson

Email: johnson@cs.uiuc.edu; Phone: 217-244-0093

- Professor, University of Illinois at Urbana-Champaign
- ◇ *Masters adviser, supervisor for the Software Engineering I & II TA position*