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, December 2012

- Area of Study: Computer Science Education
- Dissertation Topic: *Student Conceptions about the Field of Computer Science*
- 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

Rose–Hulman Institute of Technology, Terre Haute, Indiana

Associate Professor — **Spring 2013 – Present**

CSSE 220: Intro to Object–Oriented Programming (freshman level course)

- Topics: java, object oriented design, basic algorithms and data structures
- Mixed instruction, in class programming, and projects

CSSE 332: Operating Systems (sophomore/junior level course)

- Topics: threading, memory management, scheduling, etc.
- Lecture–based course with C programming assignments and large project

CSSE 290: Advanced GIT (1 credit elective course)

- Topics: git internals, merging/rebasing, branch design
- Useful course that tends to get a lot of student interest

CSSE 372: Software Project Management (junior level course)

- Topics: software processes, estimation, risk management, planning
- Discussion–oriented course

CSSE 403: Programming Language Paradigms (senior level course)

- Survey of interesting languages: Prolog, Erlang, Elm
- Project–oriented course, but also regular lectures

Also Taught

- CSSE375: Software Construction and Evolution
- CSSE333: Databases

- CSSE290: Cyberdefense Competition
- CSSE332: Software Quality Assurance
- CSSE497, CSSE498: Senior Project
- CSSE376: Software Quality Assurance

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

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

Indian Institute of Technology Bombay, Mumbai, India

Visiting Assistant Professor **Summer 2014**

Qualitative Methods in Engineering Education (graduate seminar)

- Topics: interviewing, grounded theory, content analysis
- Also advised students on research topics/approaches
- 20 students

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, Summer 2012**

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

Publications

M. Hewner and S. Mishra. *When Everyone Knows CS is the Best Major: Decisions about CS in an Indian context.* presented at Twelfth International Computing Education Research Workshop (ICER 2016). Melbourne, Australia, September 8-12, 2016.

M. Hewner. *How Undergraduates Make Course Choices.* presented at Tenth International Computing Education Research Workshop (ICER 2014). Glasgow UK, August 11-14, 2014.

M. Hewner. *Undergraduate Conceptions of the Field of Computer Science.* presented at Ninth International Computing Education Research Workshop (ICER 2013). San Diego, CA USA, August 12-14, 2013.

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

Software Engineering Professionals, Carmel, IN

Programmer **May 2018–August 2018**

- Wrote C# and Javascript for large work tracking web application

Rose–Hulman Ventures, Terre Haute, IN

Tech Lead **May 2016–July 2016**

- Manager and technical adviser for two teams of freshman CS students doing contract software development
- Experimental version for freshman, part of a mixed summer internship/instruction partnership with Rose-Hulman Ventures

Indigo Bioautomation, Indianapolis, IN

Programmer **June 2015–August 2015**

- Wrote Ruby, Java code for mass spectrometer analysis toolchain

Groupon, San Francisco, CA

Programmer **June 2013–August 2013**

- Wrote Objective-C (Ipad client–side) and python (django server–side) for Breadcrumb point–of–sale app

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

Service

- Rose–Hulman Rules and Discipline Committee, various department hiring committees
- Paper reviewer for ICER, SIGCSE, and TOCE
- Adviser for CS honor society, Computer Security Club, Boardgame club
- Coach of Duke Programming Competition Team (Fall 2011 – Spring 2012)
- Student representative on HCC Ph.D. Procedure Review Committee (Spring 2011)

References

J.P. Mellor
Email: mellor@rose-hulman.edu; Phone: 812–877–8085
- Head of Dept. of Computer Science and Software Engineering, Rose–Hulman
  - ◇ *Current boss*

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.fincher@kent.ac.uk; Phone: +44 (0)1227 824061
- Professor, University of Kent
  - ◇ *Can speak to my qualifications as a CS Education Researcher*