Phillip B. Kirlin
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Education

- Ph.D., Computer Science, University of Massachusetts Amherst (expected 2012)
  Advisor: David Jensen
- M.S., Computer Science, University of Massachusetts Amherst (2007)
  Advisor: Paul Utgoff
- B.S., Computer Science, *summa cum laude*, University of Maryland (2004)

Honors

- Outstanding Teaching Assistant Award, Department of Computer Science, University of Massachusetts Amherst, 2008.
- Nominee, Distinguished Teaching Award, University of Massachusetts, 2009–2010 AY.
- Honorable Mention, Graduate Research Fellowship Program, National Science Foundation, 2004.

Teaching Experience

- Instructor, Fundamentals of Computer Science, Center for Talented Youth Summer Intensive Studies Program (2011, 2010, 2009)

  Developed a curriculum for and taught an introductory computer science course to classes of 14–16 rising 8th–10th grade students. Designed all lesson plans and assignments. Managed a teaching assistant.

- Instructor, Computer Science 120: Introduction to Problem Solving with the Internet, University of Massachusetts Amherst (Fall 2007, Spring 2007, Fall 2006, Summer 2005).

  Redesigned a course in internet technologies for non-computer science majors. Designed all lesson plans, projects, homework assignments, and exams; held office hours; and graded assignments. Managed a teaching assistant.

  Fall and Spring semesters included roughly 60 students; Summer semesters included 12 students.

- Instructor, Labor/Management Workplace Education Program, University of Massachusetts Amherst (2006–present)

  Designed and taught courses to University staff members in various software packages. Developed a curriculum conducive to students with varying backgrounds and levels of computer experience.

- Teaching Assistant, University of Massachusetts Amherst

  – Courses include Reasoning About Uncertainty (F11, F10), Research Methods for Empirical Computer Science (S11), Introduction to Computation (S10, F09), Programming Language Paradigms (S09, S08, F05, S05, F04), and Programming with Data Structures (F08)

  – Assisted students in office hours, lead discussion sections, and graded assignments.

- Teaching Assistant, University of Maryland

  Worked as an undergraduate teaching assistant for Computer Science 250: Discrete Structures (S04, F03, S03, F02, S02). Initial duties included grading assignments and holding office hours. Later duties included leading a discussion section and designing homework assignments.

Advising and Mentoring Experience

- Undergraduate Research Mentor, Computer Science 691DD: Research Methods, Spring 2011.

  Guided six junior and senior undergraduates through semester-long research projects. Helped them choose appropriate topics, gather data, design experiments, and interpret their results. The students' research areas included algorithm analysis, disease propagation in social networks, intelligent multi-agent coordination, digital forensics, health care process evaluation, and code metrics.

Research Experience

- Graduate Research Assistant (2004–present), Knowledge Discovery Laboratory and Machine Learning Laboratory, Department of Computer Science, University of Massachusetts Amherst.

  Conducted research in music informatics with Professors David Jensen and Paul Utgoff. Focused on artificial intelligence, machine learning, and probabilistic modeling techniques for computational music analysis. Uncovered statistical regularities in how humans perform hierarchical music analysis and developed an algorithm to exploit these regularities to analyze music automatically. Helped develop an algorithm for extraction and clustering of salient musical themes. Studied techniques for voice separation in polyphonic musical textures, and used machine learning to develop a rule-based algorithm for separation.

- Graduate Research Assistant (2006), Information Extraction and Synthesis Laboratory, Center for Intelligent Information Retrieval, Department of Computer Science, University of Massachusetts Amherst.

Worked with Research Scientist Chris Pal on using machine learning techniques to classify hydro-morphological units in high-resolution aerial photographs of rivers.

- Undergraduate Research Assistant (2003–2004), Department of Computer Science, University of Maryland.

  Harnessed the efficiencies of spatial data structures to create an algorithm for performing automatic cartographic generalization of street maps. Advised by Professor Hanan Samet.

Publications

- Refereed Conference Proceedings
  - Phillip B. Kirlin and David D. Jensen. "Probabilistic Modeling of Hierarchical Music Analysis." In *Proceedings of the 12th International Society for Music Information Retrieval Conference*, pages 393–398, 2011.
  - Phillip B. Kirlin. "Using Harmonic and Melodic Analyses to Automate the Initial Stages of Schenkerian Analysis." In *Proceedings of the 10th International Society for Music Information Retrieval Conference*, pages 423–428, 2009.
  - Phillip B. Kirlin and Paul E. Utgoff. "A Framework for Automated Schenkerian Analysis." In *Proceedings of the Ninth International Conference on Music Information Retrieval*, pages 363–368, 2008.
  - Paul E. Utgoff and Phillip B. Kirlin. "Detecting Motives and Recurring Patterns in Polyphonic Music." In *Proceedings of the International Computer Music Conference*, pages 487–494, 2006.
  - Phillip B. Kirlin and Paul E. Utgoff. "VoiSe: Learning to Segregate Voices in Explicit and Implicit Polyphony." In *Proceedings of the Sixth International Conference on Music Information Retrieval*, pages 552–557, 2005.
- Refereed Articles Presented as Posters
  - Phillip B. Kirlin. "Automated Layout of Schenker Graphs by Computer." Presented at the Second International Conference on Mathematics and Computation in Music, 2009.

Professional Memberships

- Member, Special Interest Group on Computer Science Education, Association for Computing Machinery