David Johnston

Software Engineer

dwtj@iastate.edu
https://github.com/dwtj

EDUCATION

Bachelor of Engineering, Major in Software Engineering (GPA 3.5)
Iowa State University, Ames, IA. (Completed December 2015)

Bachelor of Science, Major in Mathematics + Computer Science (GPA 3.5)
Iowa State University, Ames, IA. (Expected May 2017)

Master of Science, Computer Science
Iowa State University, Ames, IA. (Expected May 2017)

COMPUTER SKILLS

Advanced Java: compiler plugins (via annotation processors), reflection, metaprogramming, concurrency, instrumentation, program analysis (via IBM's WALA).

Misc: Unix/Linux/BSD system administration; C/C++; formal verification and model checking (Spin); formal proof assistants (Coq); data analysis (R, Python, and MATLAB); Python network programming (Twisted).

EXPERIENCE

ISU Graduate Research Assistant — *January 2015 – Present*
ISU Laboratory for Software Design

- Lead dev team for @PaniniJ (`https://github.com/hridesh/panini`), a language embedded in Java for safe concurrent programming.
- Research techniques for novel ownership transfer check (both static and dynamic) for preventing certain race conditions in concurrent systems.

ISU Graduate-Course Teaching Assistant — *S2013*

- HCI 575, *Computational Perception*: Created computer vision assignments involving MATLAB, OpenCV, and PCL; guest lectured on programming with OpenCV.

ISU Undergraduate-Course Teaching Assistant — *S2012, F2013, S2014, S2016*

- CprE 185, *Introductory C*: Co-lectured weekly recitations; guest lectured on pointers.
- CprE 281, *Digital Logic*: Co-lectured weekly recitations; guest lectured on hardware-implemented finite state machines.
- ComS 319, *Software Construction and User Interfaces*: Assisted students as they completed assignments and developed semester-long group projects.
- ComS 430, *Concurrency Fundamentals and Application Integration*: Developed/graded students' assignments in concurrent programming (both thread- and actor-based); advised students with projects; instituted Git-based homework distribution/submission practices.

COMMUNITY SERVICE

- *ISU SE SAC Chair:* Led ISU Software Engineering Student Advisory Council.
- *ISU GPSS Senator:* Representative for CS in ISU Graduate and Professional Student Senate.

PUBLICATIONS

Schenck, C.; Sinapov, J.; Johnston, D.; Stoytchev, A., "Which Object Fits Best? Solving Matrix Completion Tasks with a Humanoid Robot," in *Autonomous Mental Development*, IEEE Transactions on , vol.6, no.3, pp.226-240, Sept. 2014