

# W I L L M A Y N E R

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## RESEARCH AND PROFESSIONAL EXPERIENCE

### **Research Assistant and Programmer** *Madison, WI, January 2014–present*

- Joined the integrated information theory group, led by Dr. Giulio Tononi, at the Center for Sleep and Consciousness at the University of Wisconsin–Madison.
- Designed and implemented software to calculate integrated information ( $\Phi$ ) and other quantities and structures of interest in integrated information theory.
- Developed web-based visualization tools for exploring integrated-information-theoretic properties of networks.
- Implemented genetic algorithms for evolving virtual organisms.
- Currently investigating the correspondence between an organism’s “conceptual structure” and the structure of its environment.

### **Original Cofounder and CTO, Crowdsurf.io** *Providence, RI, May–November 2013*

- Founded Crowdsurf.io to bring sophisticated analytics to the live event industry.
- Designed and implemented software architecture and proprietary algorithms.
- Contributed to product and business development.
- Obtained funding from Betaspring, a startup accelerator based in Providence, RI.

### **Researcher, REU in Computational Mathematics** *Chicago, IL, Summer 2012*

- Studied a novel 2-parameter family of kernel functions for data interpolation, under the direction of Dr. Greg Fasshauer, Professor of Applied Mathematics at the Illinois Institute of Technology, in the Research Experience for Undergraduates program.
- Contributed to a Matlab code repository of numerical experiments and conducted theoretical investigations of closed forms for Green’s functions.
- Presented results at the Joint Mathematics Meetings 2013, the Young Mathematicians Conference 2012 at Ohio State (abstract was one of 55 accepted out of 110 submitted), and Brown’s 2013 Symposium for Undergraduates in the Mathematical Sciences.

## EDUCATION

### **Brown University**

*Providence, RI, 2009–2013*

Sc.B. Mathematics–Computer Science

**Selected coursework:** Consciousness; Laboratory in Computational Cognitive Neuroscience; Artificial Intelligence; Neural Modeling Laboratory; Introduction to Neuroscience; Design and Analysis of Algorithms; Combinatorial Topology; Multiprocessor Synchronization; Cryptography; Programming with Data Structures and Algorithms; Models of Computation; Fundamental Problems of Geometry; Abstract Algebra; Linear Algebra; Creating Modern Web Applications.

### **The Dalton School**

*New York, NY, 2001–2009*

American Computer Science League team; National Merit semifinalist.

## SELECTED SOFTWARE PROJECTS

- **PyPhi:** A Python library for computing integrated information and related quantities.
- **PyAnimats:** Python software for evolving virtual organisms and investigating their dynamics and integrated-information-theoretic properties.
- **integratedinformationtheory.org and vPhi:** A website for integrated information theory, which features **vPhi**, a visual interface to PyPhi.
- **CSC website:** The web presence of the Center for Sleep and Consciousness.
- **lizwikstrom.com:** A portfolio website for an illustrator.

## SKILLS

Python, Matlab, C++, Git, L<sup>A</sup>T<sub>E</sub>X, CoffeeScript/Javascript, Unix/Linux system administration, shell programming, full-stack web development (Node.js, MongoDB, AngularJS, Express, and several other modern web technologies)