

Curriculum Vitae: Christopher Stanton

christopherstanton01@gmail.com • www.lordzapharos.com • (858) 449-1337
12626 Caminito Rosita, San Diego, CA 92128

EDUCATION

- Aug. 2014 – present* **University of Wyoming**, Laramie, WY
Doctor of Philosophy in Computer Science (expected May 2019)
Advisor: Jeff Clune
Overall GPA: 4.00
- Aug. 2010 – Dec. 2013* **Brandeis University**, Waltham, MA
Bachelor of Arts in Computer Science
Bachelor of Arts in Music Composition
Overall GPA: 3.89
- Apr. 2009 – June 2009* **Gymnasium der Benediktiner**, Meschede, Germany
Attended high school classes and participated in orchestra as part of DAAD
(German Academic Exchange Program).
- Aug. 2006 – June 2010* **Rancho Bernardo High School**, San Diego, CA
Advanced Placement Levels: Calculus AB (score of “5” on AP exam), Calculus
BC (score of “5” on AP exam), Physics C: Mechanics (score of “4” on AP exam).

HONORS AND AWARDS

- Apr. 2016* Phi Kappa Phi (invited, University of Wyoming)
May 2014 Phi Beta Kappa (Brandeis University)
May 2013 Reiner Prize in Music Composition
Aug. 2010 – Dec. 2013 Dean’s List (semester GPA of 3.5 or higher)
Aug. 2010 – Dec. 2013 National Merit Scholar
June 2010 ROP Certificate of Competency in Computer Graphics and Design

GRANTS AND FELLOWSHIPS

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|--------------------------------|---|------------------|
| <i>Sept. 2015 – Sept. 2016</i> | XSEDE Research Allocation (400,000 SUs) | \$27,000 |
| <i>Sept. 2014 – Sept. 2015</i> | XSEDE Allocation Startup (50,000 SUs) | \$3,500 |
| <i>Aug. 2014 – May 2019</i> | CEAS Excellence Fellowship | \$200,000 |

COURSE WORK

- Artificial Intelligence
- Discrete Structures
- Modal, Temporal, and Spatial Logic
- Theory of Computation
- Human-Computer Interaction
- 3D Animation
- Data Compression and Multimedia Processing
- Music Composition, Form, and Analysis

Studied with Jeff Clune, Jordan Pollack, and David Rakowski.

PUBLICATIONS

(expected May 2018)

Stanton C, Clune J (2018). *Deep curiosity search: Intra-life exploration improves performance on Atari games*. Preprint available mid-May 2018. Submitted to NIPS 2018.

Sept. 2016

Stanton C, Clune J (2016). *Curiosity search: Producing generalists by encouraging individuals to continually explore and acquire skills throughout their lifetime*. PLoS ONE 11(9): e0162235

CONFERENCES

Mar. 2016

NVIDIA GPU Programming Workshop
Colorado State University, Fort Collins, CO.

RESEARCH INTERESTS

Artificial Intelligence:

- Creation of adaptable and robust intelligence via evolutionary algorithms and neural networks
- Integration of intelligence with consumer hardware and software, including general robotics

RESEARCH EXPERIENCE

Sept. 2014 – present

Evolving AI Lab, University of Wyoming, Laramie, WY
Faculty Advisors: Jeff Clune

- Continuing work on Curiosity Search algorithm, designed to produce generalist AI agents that explore and learn from their environment like natural animals by rewarding individuals for expressing many novel behaviors within their lifetime.
- Current work indicates that a deep-learning version of Curiosity Search matches state-of-the-art performance of Google Deepmind on learning difficult Atari games from raw pixel input. Will be submitted to NIPS 2018; preprint of article expected by May 2018.

WORK EXPERIENCE

Aug. 2010 – Dec. 2013

Getz Multimedia Lab, Brandeis University, Waltham, MA
Senior Student Manager, Systems Administrator, Webmaster

- Assisted and trained patrons with various multimedia projects including film shoots and audio engineering.
- Managed a 30-computer multimedia lab environment via Unix, Apple Remote Desktop, and the Casper Imaging Suite; made system repairs and optimizations as necessary.
- Developed new management applications for computers, including user tracking technology, stats collection, and web forms.
- Designed and maintained lab website (<http://getzlab.brandeis.edu>), associated SQL blog, and content management system. Generated new content for same.

- Maintained secondary lab website (<http://go.brandeis.edu/getz>) using university content management system.
- Planned and directed staff meetings and projects.
- Assisted marketing team in drafting and executing new initiatives.
- Developed promotional materials for the lab using Photoshop, Illustrator, and InDesign.
- Created written and video tutorials for A/V equipment and software (<http://getzlab.brandeis.edu/tutorials>).
- Wrote documentation for staff and systems procedures, including current staff handbook (<http://getzlab.brandeis.edu/handbook>).
- Trained new staff in procedures and equipment.
- Worked with staff in creative projects, including video documentaries, experimental film, and audio engineering.

Aug. 2010 – present

Freelance Web Designer, Waltham, MA

- Designed new websites for clients.
- Helped maintain and improve existing websites for clients.

Aug. 2008 – Aug. 2011

Wholesome Choice Pet Market, San Diego, CA

Assistant Manager

- Assisted with product stocking, sales, customer service, and inventory.
- Helped customers choose healthier food products for dogs and cats.
- Served as technical support for occasional computer hardware and software issues.

TEACHING EXPERIENCE

Aug. 2014 – present

Laramie Robotics Club, University of Wyoming, Laramie, WY

General Instructor, Secretary of Promotional Materials (2014-2017)

- Taught Python and general programming techniques to middle- and high-school students.
- Trained students in use of Scribbler robots.
- Mentored students on how to solve various robot tasks, including wall-following, maze-solving, and blob detection.
- Documented and uploaded common workflows to club wiki.

Jan. 2013 – Dec. 2013

Getz Multimedia Lab, Brandeis University, Waltham, MA

Photoshop Instructor

- Taught patrons how to use Adobe Photoshop in a workshop setting.
- Created lesson plans for a 6-part “Photoshop for Beginners” course.
- Provided on-demand private instruction to lab patrons.

Aug. 2010 – Dec. 2013

Getz Multimedia Lab, Brandeis University, Waltham, MA

Software and A/V Equipment Instructor

- Trained and certified patrons to use professional-grade audio and video equipment.
- Held one-on-one project consultations to help patrons determine what software and equipment to use.
- Trained patrons to use professional video, audio, and graphics software.

Aug. 2008 – Aug. 2010

Private Violin Instruction, San Diego, CA

- Taught music theory and proper instrument technique to middle-school students.
- Prepared students for recitals and assisted students to prepare for school music exams.

SKILLS

Programming/Markup Languages: Java, C, C++, R, MATLAB, JavaScript, Lua, Clojure, Python, AppleScript, HTML, CSS, PHP, ReStructuredText, Sphinx

AI Frameworks: Torch, Tensorflow

Operating Systems: Windows (all versions), Mac OS X (10.4+), Linux (all versions)

Video Software: Adobe Premiere, Adobe After Effects, Avid Media Composer, Final Cut Pro

Graphics Software: Adobe Photoshop, Adobe InDesign, Adobe Illustrator, Autodesk 3ds Max, Autodesk Maya, Blender

Audio Software: Adobe Audition, Logic Pro, Sony Sound Forge, Finale, Audacity

Other Software: Adobe Dreamweaver, Microsoft Office (all versions), Apple Remote Desktop, Casper Imaging Suite

Languages: German (proficient)

Experienced with a wide variety of professional audio and video equipment, including but not limited to: Panasonic AF-100, Canon EOS DSLR, Azden/Rode shotgun microphones, and halogen/LED lights.

Familiar with robotics and CAD software via high school robotics club (participated at FIRST robotics competition, Spring 2009).

Designed open-source, cross-platform “JavaMon” game engine using LibGDX framework; currently open to selected beta-testers at <http://www.javamon.net/>. Deploys to desktop, Android, and iOS.

- 5-year project to develop cross-platform game engine from scratch, completed February 2018.
- Designed to allow people with no/little programming experience to create their own games via a map editor, simple scripting language, and other pre-provided utilities.
- Includes rendering, graphical widgets, layered tile mapping, sound engine, scripting support, debugging tools, turn-based battle engine, wireless/multiplayer support, story/quest support, various game creation utilities, and fully-documented API.
- Will be released open-source after beta-testing is complete (expected end of 2018).