

Curriculum Vitae: Christopher Stanton

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Laramie, WY

EDUCATION

- Aug. 2014 – Dec. 2018* **University of Wyoming**, Laramie, WY
MSc. in Computer Science
Primary 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, worth \$1,000
- 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
- Supervised/Unsupervised Learning
- Bayesian Statistics
- Modal, Temporal, and Spatial Logic
- Human-Computer Interaction
- 3D Animation
- Data Compression and Multimedia Processing
- Music Composition, Form, and Analysis

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

RESEARCH INTERESTS

Artificial Intelligence:

- Creation of adaptable and robust intelligence via evolutionary algorithms and neural networks
- Exploration strategies for reinforcement learning and evolutionary algorithms
- Supervised learning: image recognition and anomaly detection

PUBLICATIONS

- Dec. 2018* Stanton C, Clune J (2018). *Deep curiosity search: Intra-life exploration can improve performance on Atari games*. NIPS Deep Reinforcement Learning Workshop.
- 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

- Dec. 2018* **NIPS Deep Reinforcement Learning Workshop**
Poster presentation, Montréal, Canada
- Mar. 2016* **NVIDIA GPU Programming Workshop**
Colorado State University, Fort Collins, CO.

RESEARCH EXPERIENCE

- Sept. 2014 – Dec. 2018* **Evolving AI Lab**, University of Wyoming, Laramie, WY
Faculty Advisors: Jeff Clune, James Caldwell, Amy Banic, John Hitchcock, and Jonathan Prather
- Designed Curiosity Search algorithm, which produces generalist AI agents that explore and learn better from their environment. Obtained solid improvements over other exploration algorithms in a simple maze domain.
 - Demonstrated scalability of Curiosity Search to human-level problems, *viz.* matching state-of-the-art performance (vs. Google Deepmind) on learning to play difficult Atari games from raw pixel input.
 - Designed an optimized replacement for the Fastsim robot simulator, used by self and other lab members as part of the Sferes research platform.
 - Wrote and obtained two grants for computational resources (XSEDE).

WORK EXPERIENCE

- Jan. 2019 – present* **Foundation Department**, University of Wyoming, Laramie, WY
Senior Computer Support Specialist
- Sept. 2014 – Dec. 2018* **Evolving AI Lab**, University of Wyoming, Laramie, WY
Research Student, Documentation Coordinator

- Assisted moving the lab to a new building, including: coordinating with construction teams, providing specifications for new lab equipment including a projector, and designing the new, furnished lab space.
- Maintained and updated lab website with new publications, videos, etc.
- Assisted with filming and editing of research videos.
- Updated lab wiki with instructional information and research tutorials.
- Coordinated with administration to purchase new lab equipment.

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 (Macintosh) via Apple Remote Desktop and the Casper Imaging Suite; performed system repairs, (re)installations, and updates as necessary.
- Developed new management applications for computers, including user tracking technology, stats collection, and web forms.
- Designed and maintained lab website, associated SQL blog, and content management system. Generated new content for same.
- Maintained secondary lab website using university CMS.
- 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.
- Wrote documentation and designed operating procedures for staff.
- 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 computer hardware and software issues.

TEACHING EXPERIENCE

Aug. 2014 – Dec. 2018

Laramie Robotics Club, University of Wyoming, Laramie, WY
General Instructor, Secretary of Promotional Materials (2014-2017)

- Taught Python and general programming to middle-/high-school students.
- Trained students in operation and programming 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 instrument technique to middle-school students.
- Prepared students for recitals and assisted students to prepare for school music exams.

PROJECTS

*May 2013 – present***JavaMon Game Engine**, Designer

- Goal to develop a fully-documented, cross-platform game engine from scratch, deploying to Android, iOS, and desktop computers.
- Developed tools in Java Swing for people with no programming experience to create 2D, role-playing games from scratch.
- Wrote over 60,000 lines of code and implemented rendering, sound, scripting, a turn-based battle engine, multithreading support, XML parsing, scripting, rendering, and Dropbox REST web calls for multiplayer.
- Currently pen to selected beta testers at <http://www.javamon.net/>.

SKILLS

- **Languages:** Java, C++, Python, R, MATLAB, Lua, HTML, CSS, XML
- **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, Apple Remote Desktop, Casper Imaging Suite, Drupal Content Management System
- Comfortable operating Windows, Mac OS X, and Linux operating systems.
- Familiar with Torch and Tensorflow frameworks for research in artificial intelligence.
- Experienced with a wide variety of audio and video equipment, including but not limited to: Panasonic AF-100, Canon EOS DSLR, Azden/Rode shotgun microphones, and halogen/LED lighting setups.
- Familiar with robotics and CAD software via high school robotics club (participated at FIRST robotics competition, Spring 2009).
- Proficient in reading and speaking German.