







Ellis L. Brown II

Curriculum Vitae

CONTACT INFORMATION

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EDUCATION

Vanderbilt University, Nashville, TN
Osage Nation Higher Education Scholarship
Bachelor of Science, Computer Science
Bachelor of Arts, Mathematics

Aug. 2013 – **May 2017**

CS GPA: 3.6/4.0

RESEARCH INTERESTS

Deep Learning • Machine Learning • Artificial Intelligence • Computer Vision
Cognitive Science & Modeling • Human & Machine Intelligence • Neuroevolution

RESEARCH

Artificial Intelligence and Visual Analogical Systems Lab Dec. 2016–present
Advised by Dr. Maithilee Kunda




- Proposed and implemented a computational cognitive architecture used to model and understand human visual attention in the context of visual search for a spatiotemporal target. "SpatioTemporal Template-based Search" (STTS).
- Helped create and test a novel image classification dataset "EMMI" from the viewpoint of toddlers playing with toys, described in Xiaohan Wang et al. [ICCV-17].

PUBLICATIONS

Brown, E. L., II, Park, S., Warford, N., Seiffert, A. E., Kawamura, K., Lappin, J. S., & Kunda, M. (2018, Feb. 1). *SpatioTemporal Template-based Search (STTS): An Architecture to Model Search for Spatiotemporal Targets*. Submitted to CogSci-2018.

Brown, E. L., II, Seiffert, A. E., Warford, N., Park, S., & Kunda, M. (2017, Sept. 21). *Computational Cognitive Systems to Model Information Salience*. Abstract presented at the American Indian Science and Engineering Society National Conference, Denver, CO. [slides] [link]

PROJECTS

SSD.PyTorch | [GitHub:// amdegroot/ssd.pytorch](#)  42  822  288 Mar. 2017
Implementation of Single Shot MultiBox Detector object detection network in PyTorch.

- Unified framework for real-time object detection using a single network, outlined in Wei Liu et al. [arXiv:1512.02325v5]
- Beat performance of original model training from scratch on VOC (mAP 77.43%).
- Code cited various times: [Medium](#) • [AI GitBook](#) • [The Incredible PyTorch](#)

Name2Gender | [Blog Post](#) | [GitHub:// ellisbrown/name2gender](#) Dec. 2017
Gender Inference from Character Sequences in Multinational First Names

- Implemented Naive Bayes & Char-RNN approaches
- Wrote [blog post](#) on Medium, picked up by *Towards Data Science* Publication

DeepGenres.Torch | [GitHub:// amdegroot/deepgenres.torch](#) Feb. 2017
Music genre classification from 3 second audio clips using CNNs built in Torch.

TEACHING

Teaching Assistant and Grader, under Dr. Jerry Roth Fall 2015
Program Design & Data Structures, Vanderbilt University School of Engineering

SELECTED COURSEWORK

Neural Networks & Deep Learning – deeplearning.ai (Coursera) • Projects in Artificial Intelligence • Convolutional Neural Networks for Visual Recognition – Stanford (online)

- Artificial Intelligence • Big Data • Coding Theory & Cryptography • Algorithms • Number Theory • Probability & Statistics • Linear Algebra

PROGRAMMING SKILLS	Python • Java • JavaScript • MATLAB • C++ • Bash • \LaTeX PyTorch • OpenCV • SKLearn • NLTK • AWS • Storm • Angular2 • Node.js
INDUSTRY	<div> <i>Software Engineer</i> Jul. 2017–present </div> <div> BlackRock, Aladdin Product Group – New York, NY <ul style="list-style-type: none"> Helped create a scalable system to process mutual fund reference data; used a Storm topology to distributedly process and persist ~10k records per day into Aladdin. Working to build out and deploy initial phase of the onboarding automation system proposed by my intern hackathon team (see below). </div> <div> <i>Software Engineering Intern</i> Summer 2016 </div> <div> BlackRock, Aladdin Product Group – New York, NY <ul style="list-style-type: none"> Built and launched an Angular2 webapp to allow custom rule creation and management for the company's cash reconciliation process. <i>Intern Hackathon Winner</i> (Team of 4) – Proposed and prototyped a Machine Learning system to automate contract term extraction from legal documents during new client onboarding, a business process which demands more than 10k man-hours per year. </div> <div> <i>Software Engineering Intern</i> Summer 2015 </div> <div> Exegy, Real Time Market Data Solutions – Saint Louis, MO <ul style="list-style-type: none"> Overhauled system to verify which data feeds each client is entitled to access by transitioning entitlement storage from daily XMLs to persistent MySQL database. </div>
SOCIETIES	American Indian Science and Engineering Society (AISES) Lime Connect Network for Students with Disabilities
AWARDS	<div> <i>Finalist</i>, Google Lime Scholarship 2016 </div> <div> <i>Finalist</i>, Lime Connect Fellowship 2015 </div> <div> <i>All-Conference</i>, SEC Second Team, Water Polo 2014 </div> <div> <i>Academic All-American</i>, USA Water Polo 2012, 2013 </div>
EXTRA-CURRICULAR ACTIVITIES	<div> <i>Mentor</i>, Code/Interactive (C/I) 2018-present <ul style="list-style-type: none"> Meeting with an underprivileged high school student biweekly to help him learn web development fundamentals and create a personal website. </div> <div> <i>Tour Guide</i>, Vanderbilt Admissions 2014-16 <ul style="list-style-type: none"> Led weekly campus tours to groups of 10-50+ prospective students. </div> <div> Elected <i>Captain & President</i>, Vanderbilt Water Polo Club 2014-16 <ul style="list-style-type: none"> SEC Champions, competed in CWPA National Championship. 2014 </div> <div> Elected <i>Social Chairman</i>, Kappa Sigma Fraternity (Kappa Chapter) 2014-16 <ul style="list-style-type: none"> Managed \$45k semi-annual budget; served on chapter's Executive Council. </div> <div> USA Water Polo 2010-13 <ul style="list-style-type: none"> Competed in Junior Olympics. 2012, 2013 Trained in Olympic Development Program. 2010-13 </div>