







# 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](#)  37  711  227 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

<b>PROGRAMMING SKILLS</b>	Python • Java • JavaScript • MATLAB • TypeScript • C++ • Bash • $\LaTeX$ PyTorch • OpenCV • CUDA • SKLearn • NLTK • AWS • Storm • Angular2 • Node.js	
<b>INDUSTRY</b>	<p><i>Software Engineer</i> Jul. 2017–present  <b>BlackRock</b>, Aladdin Product Group – New York, NY</p> <ul style="list-style-type: none"> <li>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.</li> <li>Working to build out and deploy initial phase of the onboarding automation system proposed by my intern hackathon team (see below).</li> </ul> <p><i>Software Engineering Intern</i> Summer 2016  <b>BlackRock</b>, Aladdin Product Group – New York, NY</p> <ul style="list-style-type: none"> <li>Built and launched an Angular2 webapp to allow custom rule creation and management for the company's cash reconciliation process.</li> <li><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.</li> </ul> <p><i>Software Engineering Intern</i> Summer 2015  <b>Exegy</b>, Real Time Market Data Solutions – Saint Louis, MO</p> <ul style="list-style-type: none"> <li>Overhauled system to verify which data feeds each client is entitled to access by transitioning entitlement storage from daily XMLs to persistent MySQL database.</li> </ul>	
<b>SOCIETIES</b>	American Indian Science and Engineering Society (AISES) Lime Connect Network for Students with Disabilities	
<b>AWARDS</b>	<p><i>Finalist</i>, Google Lime Scholarship 2016  <i>Finalist</i>, Lime Connect Fellowship 2015  <i>All-Conference</i>, SEC Second Team, Water Polo 2014  <i>Academic All-American</i>, USA Water Polo 2012, 2013</p>	
<b>EXTRA-CURRICULAR ACTIVITIES</b>	<p><i>Mentor</i>, Code/Interactive (C/I) 2018-present</p> <ul style="list-style-type: none"> <li>Partnered with a high school student to help teach him computer science fundamentals and to provide college and career guidance.</li> </ul> <p><i>Tour Guide</i>, Vanderbilt Admissions 2014-16</p> <p>Elected <i>Captain &amp; President</i>, Vanderbilt Water Polo Club 2014-16</p> <ul style="list-style-type: none"> <li>SEC Champions, competed in CWPA National Championship. 2014</li> </ul> <p>Elected <i>Social Chairman</i>, Kappa Sigma Fraternity (Kappa Chapter) 2014-16</p> <ul style="list-style-type: none"> <li>Managed \$45k semi-annual budget; served on chapter's Executive Council.</li> </ul> <p>USA Water Polo 2010-13</p> <ul style="list-style-type: none"> <li>Competed in Junior Olympics. 2012, 2013</li> <li>Trained in Olympic Development Program. 2010-13</li> </ul>	