Ellis L. Brown II — *Curriculum Vitae*

CONTACT INFORMATION

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RESEARCH INTERESTS

Deep Learning • Artificial Intelligence • Computer Vision • Machine Learning
Cognitive Science • Neuroscience • Brain-Computer Interfaces

EDUCATION

Vanderbilt University, Nashville, TN — Aug 2013 – **May 2017**
Bachelor of Science, Computer Science — CS GPA: 3.6/4.0
Bachelor of Arts, Mathematics

ADVANCED COURSEWORK

Machine Learning • Artificial Intelligence • Web-based System Architecture • Big Data
Computer Networks • Coding Theory & Cryptography • Number Theory • Algorithms
Probability & Statistics • Program Design & Data Structures

PROGRAMMING SKILLS

Languages: Python • JavaScript • Java • MATLAB • TypeScript • C++ • Bash • LaTeX
Frameworks: PyTorch • Torch • SKLearn • NLTK • AWS • Angular2 • Node.js • git

RESEARCH EXPERIENCE

Research Assistant — Jan 2017–present
Artificial Intelligence and Visual Analog Systems Lab, Vanderbilt University School of Engineering – Nashville, TN

- Researcher under direction of Dr. Maithilee Kunda on ONR funded project aiming to understand mechanisms human brain uses to solve spatiotemporal visual search tasks.
- Lead author on paper submitted for review to **AAAI-18 Conference** Sep 2017
- Gave oral presentation at **AISES National Conference** Sep 2017
- Working alongside two graduate students to create a novel image classification dataset to be used in training deep neural networks.

OPEN SOURCE EXPERIENCE

SSD.PyTorch GitHub:// amdegroot/ssd.pytorch 22 ★ 326 93 Mar 2017–present
PyTorch Implementation of Single Shot MultiBox Detector

- Worked with Max de Groot to implement and maintain a PyTorch version of the unified framework for real-time object detection using a single network outlined in Wei Liu's paper [arXiv:1512.02325v5]
- Made the code clear, concise, and as true-to-the-paper as possible with extensive documentation and commenting. Snippets are cited by multiple online textbooks & blogs • Medium • L. Santos AI GitBook • The Incredible PyTorch

DeepGenres.Torch GitHub:// amdegroot/deepgenres.torch May 2017
Deep convolutional neural network for audio classification of music genres.

TEACHING EXPERIENCE

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

- Debugged and assessed weekly programming assignments and exams
- Held weekly office hours for class of 160+ students.

PROFESSIONAL EXPERIENCE

Software Engineer Jul 2017–present
BlackRock, Aladdin Product Group, Core Data Team – New York, NY

Software Engineering Intern Summer 2016
BlackRock, Aladdin Product Group – New York, NY

- *Full-Stack Developer* – Wrote Angular2 webapp for Cash Reconciliation Rule Management using TypeScript with SpringMVC Java back-end.
- *Intern Hackathon Winner* (Team of 4) – Structuring Unstructured Data at Scale PDF Parsing, NLTK Named Entity Recognition, SKLearn Decision Tree prediction, Angular2 web interface

Software Engineering Intern Summer 2015
Exegy, Real Time Market Data Solutions – Saint Louis, MO

- Overhauled Data Entitlements system with Python script to populate SQL db

COMMUNITY SERVICE

Volunteer, Manna Project International, Corozal Town, Belize Mar 2016

- Constructed a new house for Jacob's Farm, the country's only drug and alcohol rehabilitation farm in a rural village called Patchakan

EXTRA-CURRICULAR ACTIVITIES

Tour Guide, Vanderbilt Admissions 2014-16

Elected *Captain & President,* Vanderbilt Water Polo Club 2014-16

- SEC Champions, competed in CWPA National Championship 2014

Elected *Social Chairman*, Kappa Sigma Fraternity (Kappa Chapter) 2014-16

- Managed $45k semi-annual budget; served on chapter's Executive Council
- Selected to represent Kappa Chapter at:
  - Kappa Sigma National Leadership Conference Summer 2014
  - Vanderbilt Greek Emerging Leaders Program Fall 2014

USA Water Polo 2010-13

- Junior Olympics 2012, 2013
- Olympic Development Program 2010-13

AWARDS

1st BlackRock NYC Intern Hackathon 2016
Finalist, BlackRock Founder's Scholarship 2016
Finalist, Google Lime Scholarship 2016
Finalist, Lime Connect Fellowship 2015
All-Conference, SEC Second Team, Water Polo 2014
Academic All-American, USA Water Polo 2012, 2013

SOCIETIES

American Indian Science and Engineering Society (AISES)
Lime Connect Network for Students with Disabilities

PUBLICATIONS

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

Park, S.*, **Brown, E. L., II***, Warford, N.*, Seiffert, A. E., Kawamura, K., Lappin, J. S., & Kunda, M. (2017, Sept. 11). *A Computational Cognitive Architecture to Model Human Visual Search for Spatiotemporal Targets*. Submitted to AAAI-18.
*These authors all contributed equally to this research