

Erick O. Oduniyi

Complex Systems Researcher, Designer, Engineer, & Software Developer

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EXPERIENCE

Please click *highlighted* text to get more information about the project

Life Preparatory Academy

K-12 Private International Christian School

Wichita, KS

Oct 2019 - Current

- + **Part-Time Teaching:** Teaching three K-12 classes: Pre-Algebra, Engineering Fundamentals, and Robotics Club
Skills Under Development: **Mentoring, Community organization, Public speaking**

National Institute for Aviation Research

Robotics & Automation Laboratory

Wichita, KS

Oct 2019 - Dec 2019

- + **Automation Intelligence:** Worked on various industrial robotic systems (ABB, KUKA, Universal Robots) to demonstrate automation concepts and improve the design and manufacturing of aviation technologies
Skills Developed: **C# programming, Mechatronics engineering, UI/UX design, Visual Basic Programming**

Harvard University

Harvard Forest

Petersham, MA

May 2019 - Aug 2019

- + **The Fruits of Provenance:** Worked with Harvard Forest's Data Provenance Group to develop an R package that generates HTML-based animations of provenance
Skills Developed: **R programming, UI/UX design, Web development**

Children's Mercy Kansas City

Center for Pediatric Innovation

Kansas City, MO

May 2018 - May 2019

- + **Web Development & User-Experience Design:** Worked with Children's Mercy Hospital's Center for Pediatric Innovation to develop their *Digital Engagement Center* and other patient-focused applications
Skills Developed: **UI/UX design, Web development**

University of Kansas

Department of Ecology & Evolutionary Biology

Lawrence, KS

Aug 2017 - Aug 2019

- + **Forecasting Measles Outbreaks Through AntiVaxxer Twitter Sentiment:** Used Twitter analytics (Twitter API) and dictionary-based sentiment analysis (**R:** pattern, sentimentR, syuzhet) on anti-vaccination related Twitter data to generate forecasting models for Measles outbreaks
- + **Modeling Ebola Transmission Dynamics with Media Effects:** Developed various ordinary differential equation systems to model the impact of mass media on the 2014-2016 Ebola epidemic
Skills Developed: **Mathematical modeling/simulation, MATLAB programming, R programming**

University of Kansas

Speech & Applied Neuroscience Laboratory

Lawrence, KS

Aug 2017 - Aug 2019

- + **Modeling Language Learning Using Child-Directed Speech:** Applied speech recognition and processing technologies (i.e., Kaldi ASR toolkit, CMU Sphinx) and network analysis tools to understand early-child language acquisition
Skills Developed: **Behavioral analysis, MATLAB programming, Python programming**

University of Kansas

Center for Design Research

Lawrence, KS

Jan 2017 - Dec 2018

- + **Development of Alternate Cognition in Humanoids Through Human-Centered Design:** Worked on developing an emotion recognition framework to improve companionship abilities for social robots NAO, Pepper, and Sanbot. Focused on implementing a system that processes natural language and physiological signals from patients to build representations of said patient's underlying psychological state.

- + **Enhancing the KU Cancer Center Patient-Centric Experience Through Design Thinking:** Assisted with developing way-finding technology to enhance the patient experience at the University of Kansas Cancer Center. Assembled and prototyped an RFID and Estimote beacon system for patient sensing.

Skills Developed: Behavioral analysis, Human-robot interaction, Product prototyping, Python programming

Santa Fe Institute

Complexity Research Fellows

Santa Fe, NM

Jun 2017 - Aug 2017

- + **Analyzing the Role of Emotion in Cultural Transmission:** Researched the role emotion plays in cultural transmission (CT) of stories. Utilized sentiment analysis tools (**R:** pattern, sentimentR, syuzhet; **Python:** nltk, scikit-learn) and developed CT algorithms, **psycho-physiology experiment** (currently being carried out at KU's Experimental Media Research Lab) to further extend our results

Skills Developed: Behavioral analysis, Python programming, R programming

University of Kansas: Kansas Union

KJHK Student-Run Radio Station

Lawrence, KS

Jan 2015 - May 2018

- + **Radio Afrika:** Volunteered once a week with KJHK's Arts & Culture Director to showcase African Music, African people, African stories, and the many ways the African continent has permeated the world

Skills Developed: Arts and science journalism, Audio engineering, Community organization

University of Kansas

School of Engineering

Lawrence, KS

Aug 2015 - May 2017

- + **Desk & Facilities Assistance:** Helped recruit prospective engineering students by engaging with high school students and their families through email, facility tours, and various KU recruitment events

Skills Developed: Community organization, Large-group tour guiding, Leadership

University of Kansas: Kansas Union

KJHK Student-Run Radio Station

Lawrence, KS

May 2016 - May 2017

- + **App Development:** Worked on a two-person team to develop a new KJHK iOS and Android app using Ionic
- + **Equipment Support:** Provided all pertinent support functions for KJHK digital operations including: KJHK systems administration, in-house CPU support, various radio and audio equipment
- + **Website Management:** Provided website design, maintenance, and KJHK streaming support via WordPress

Skills Developed: Community organization, Radio engineering, Website management

University of Kansas

The Information & Telecommunication Technology Center

Lawrence, KS

May 2016 - Aug 2016

- + **Mobile Spectrum Sensing:** Researched and developed new applications for cognitive and software-defined radios. Built a mobile test-bed for sensing abnormalities in the frequency spectrum using MATLAB, USRP B200-minis, and Raspberry Pis

Skills Developed: C/C++ programming, Embedded systems design, MATLAB programming

University of Kansas: Kansas Union

KJHK Student-Run Radio Station

Lawrence, KS

Aug 2015 - May 2016

- + **Science Outreach:** Interviewed various KU faculty, independent researchers, and students to help illuminate scientific research to the Lawrence community
- + **Technology Assistance:** Made design changes to KJHK's website to promote a more uniform aesthetic. Painted and assembled a **Moog Etherwave Theremin** for publicity and recruitment purposes

Skills Developed: Arts and science journalism, Audio engineering, Community organization, Data analysis, Leadership

University of Kansas: Kansas Union

KJHK Student-Run Radio Station

Lawrence, KS

Jan 2015 - May 2015

- + **Audio Production:** Worked with station personnel to produce weekly series, "Live@KJHK", by recording and mixing selections from listeners favorite local and touring bands
- + **Equipment Management:** Took inventory, organized, and assisted KJHK staff with equipment use

Skills Developed: Audio engineering, Community organization, Data analysis, Leadership

Wichita State University*Bachelors of Science***Major:** *Computer Engineering***Anticipated Graduation:** *May 2021*

Wichita, KS

*Jan 2020 - Current***University of Kansas***Bachelors of Science***Major:** *Computer Engineering***Minor:** *Mathematics*

Lawrence, KS

Aug 2014 - May 2019

Journal Reviewed Publications

- [1] **Erick Oduniyi**, Brad Gibbons, Myunghyun Oh, & Folashade Augusto. *Modeling Ebola Transmission Dynamics with Media Effects on Disease & Isolation Rates*. Springer Special Volume on Infectious Diseases & our Planet Earth. (2019)

Conference Reviewed Proceedings*Abstract-reviewed conference presentations*

- [1] **Erick O. Oduniyi**, Rebekah M. Manweiler, Jon S. Brumberg, *An Engineered Approach: Examining the role of Child-directed Speech with Automatic Speech Recognition & Network Science*. 41st Annual Meeting of the Cognitive Science Society. (2019)
- [2] **Erick Oduniyi**, Brad Gibbons, Myunghyun Oh, & Folashade B. Augusto. *Modeling the Impact of Media Campaigns & Limited Infrastructure of Ebola Transmission*. Annual Biomedical Research Conference for Minority Students, November 14-17, Indianapolis, IN. (2018)
- [3] **Erick Oduniyi** & Vanessa Ferdinand. *Emotion Extraction in Stories Through Sentiment Analysis and Physiological Sensing*. Cultural Evolution Society Conference, October 22-24, Tempe, AZ. (2018)
- [4] Rebekah Manweiler, **Erick Oduniyi**, Jon S. Brumberg, & Nicole M. Beckage. *Evaluation of Child-directed Speech Through Network Analysis & Automatic Speech Recognition*. ACM Richard Tapia Celebration of Diversity in Computing, September 11-12, Orlando, FL. (2018)
- [5] **Erick Oduniyi**, Rebekah Manweiler, Jon S. Brumberg, & Nicole M. Beckage. *Assessing Child-directed Automatic Speech Recognition*. Cognitive Science Association for Interdisciplinary Learning, July 27-30, Hood River, OR. (2018)
- [6] **Erick Oduniyi**, Brad Gibbons, Folashade B. Augusto, & Myunghyun Oh. *Modeling Ebola Transmission Dynamics with Media Effects*. National Institute for Mathematical & Biological Synthesis Meeting, November 11-12, Knoxville, TN. (2017)
- [7] James Rolfe, Rebekah Manweiler, **Erick Oduniyi**, Massimo Stella, & Nicole M. Beckage. *Classifying language development based on network structure*. Cognitive Network Science 2017, June 19th, Indianapolis, IN. (2017)

AWARDS & FELLOWSHIPS

Spencer Museum of Art Research Award – 2019

Scientific Innovation Through Diverse Perspectives Symposium Travel Award – 2018

Library Art Student Exhibition – 2018-2019

University of Kansas Sigma Xi Award – 2018

Best in Group University of Kansas Research Symposium Oral Presentation Award – 2018

Summer Extension Computing Research Association Undergraduate Research Award (CREU) – 2018

*Computing Research Association Undergraduate Research Award (CREU) – 2017-2018

**CREU is an NSF funded fellowship program that supports undergraduate students planning to attend graduate school*

University of Kansas Undergraduate Research Award (UGRA) – 2017

Spencer Museum of Art Research Award – 2017

*Initiative for Maximizing Student Development (IMSD) – 2016-2019

**IMSD is an NIH funded fellowship program that supports undergraduate students planning to attend graduate school*

Hall Center Humanities Scholar – 2016-2017

NASA Kansas Space Grant Consortium Scholarship – 2016