

JULIUS ADEBAYO

EDUCATION

PhD Candidate, Electrical Engineering and Computer Science,
Master of Science, Electrical Engineering and Computer Science, June, 2016,
Master of Science, Technology and Policy, June, 2016,
Massachusetts Institute of Technology
THESIS: *FairML: Toolbox for Investigating Bias in Predictive Models*,
Concentration: Machine Learning & Public Policy.

Bachelor of Science, Mechanical Engineering,
Minors: Mathematics,
Brigham Young University, UT.,
THESIS: *Dynamical Structure Function Identifiability Conditions Enabling Signal Structure Reconstruction*.

WORK & RESEARCH EXPERIENCE

Research Engineer Sept. 2016 - Present
Fast Forward Labs., NY

- Fast forward labs is a company that transfers machine learning research in academia into actionable products for companies to use.
- My role involves prototyping different machine learning products for use by the company clients.

Intern Data Scientist Jun. 2016 - Sept. 2016
Apple Inc, Cupertino, CA. (Jan. 2015 - Feb. 2015)

- Developed end-to-end alerting system to detect anomalies and causes of such anomalies in time series data.
- Worked with data scientists on novel temporal features, business insights, and model evaluation.
- Project selected to be presented to senior vice president of software engineering.

Graduate Research Assistant 2013 - 2016
Human Dynamics Lab & Decentralized Information Group, MIT

- Built FairML, a system to automatically diagnose an unknown machine learning model (classifier or regressor) for bias. FairML outputs reports quantifying the dependence of a model on its inputs. Built web app in flask as public demo.
- Worked on maintaining the Punya mobile development platform, which enables humanitarian organizations and practitioners to easily develop and deploy mobile applications.
- Won MISTI grant to initiate collaboration between MIT and Makerere University in Uganda. Approved project involves scaling up mobile application that can be used to automatically diagnose diseases from images.

Data Science Fellow at Data Science for Social Good June 2014 - August 2014
Harris School of Public Policy, University of Chicago

- Worked with the office of president of Mexico to identify key strategies and actionable policies that can be implemented to further reduce maternal mortality in Mexico at the municipality level.
- Used feature selection techniques (e.g. LASSO) to identify prenatal care, cesarean section, and health insurance type as key factors contributing to high incidence of maternal deaths.

ORGANIZATIONS

Co-Founder Aug. 2014 - Present
Saana.

- Saana is a data analytics company that has developed a mobile-based real time reporting platform that delivers news events to subscribers based on their location. Saana ensures that individuals are aware of real time traffic, safety and security, and business developments in their neighborhoods.
- Saana is focused on Nigeria at the moment, but will expand to other West African countries in 2017.

Co-Founder

May. 2015 - Present

Data Science Africa.

- We at Data Science Africa aim to create a hub of data science researchers across Africa.
- We organize a yearly conference (Kenya 2015, Uganda 2016) where several leading data scientists across Africa are invited to present their work. We also teach data science courses to university students and professionals.
- Our goal is to equip practitioners with tools that they can use to tackle problems in Africa.

Research Analyst

August 2012 - July 2013

New England Complex Systems Institute, Cambridge, MA

- Work focused on studying empirical networks in Twitter to assess theories relating to contagion and spread of information in social networks.
- Extended a python-based application for automatically collecting and analyzing tweet event data to study information propagation. The community structure of online information sharing on Twitter for the BBC was studied over time.

VOLUNTEER EXPERIENCE

Volunteer Staff

August 2012 - April 2016

National Model United Nations (NMUN), New York, NY, USA

As a volunteer staff member for NMUN, I was responsible for researching, writing, and editing background guide on various topics for student delegates participating in model united nations. I was also responsible for managing the Dais staff and student committee during the conference.

- Director, United Nations Industrial Organization (UNIDO) for NMUN NY 2016 Week B.
- Director (Interim), United Nations Food and Agriculture Organization (FAO) for NMUN NY 2015 Week A.
- Assistant Director, Peacebuilding Commission for NMUN NY 2014 Week A.
- Assistant Director, General Assembly First Committee for NMUN DC 2013.
- Network Manager, Conference Services, NMUN NY 2013 Week A.

Remote Volunteer Researcher

2016 - Present

Nigerian Bureau of Statistics, Abuja, Nigeria

- Working with the Nigerian bureau of statistics to help analyze and interpret the variety of datasets that the organization produces.
- Analysis involves producing visualizations and reports for members of the data analysis team on data relating to inflation, trade, and labor productivity.

Peer Reviewed Papers Published

- **J. Adebayo**, T. Southwick, V. Chetty, E. Yeung, Y. Yuan, J. Goncalves, J. Grose, G.B. Stan, S. Warnick. Dynamical Structure Function Identifiability Conditions Enabling Signal Structure Reconstruction. Proceedings of the Conference on Decision and Control IEEE, December 2011.
- **J. Adebayo**, Tiziana Musso, Kawandeeep Virdee, Casey Friedman, Yaneer Bar-Yam, An Exploration of Social Identity: The Structure of the BBC News-Sharing Community on Twitter. Complexity 19 (5) pp.55-63 (2014)
- S. L. Field, Tathagata Dasgupta, Michele Cummings, Richard S. Savage, **Julius Adebayo**, Hema Mcsara, Jeremy Gunawardena, Nicolas M. Orsi."Bayesian Modeling Suggests that IL-12 (p40), IL-13 and MCP-1 drive murine cytokine networks in vivo" BMC Systems 2015.
- **J. Adebayo**, L. Kagal. A Privacy Protection Procedure for Large Scale Individual Level Data. Proceedings of the Conference Intelligence and Security Informatics (ISI) IEEE, May 2015.
- A. Jain, **J. Adebayo**, E. D. Leon, W. Li, L. Kagal, P. Meier, and C. Castillo. Mobile Application Development for Crises Data. Proceedings of Humanitarian Technology: Science, Systems and Global Impact (HumTech), 2015.
- W. Li, **J. Adebayo**, F. Shih, L. Kagal. The Role of Mobile Application in Humanitarian Relief. 12th International Conference on Information Systems for Crisis Response and Management, 2015.