

Kelechi M. Ikegwu

Kelechi Ikegwu
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Current Objective: Seeking employment in the field of data science.

Education	University of Illinois at Urbana-Champaign <ul style="list-style-type: none">• Ph.D., Informatics (August 2016 – May 2021)• Informatics Terminal Fellowship (2020-2021)• Graduate College Fellowship (2017-2020)• Associate GEM Fellow (2016-Present)• Illinois Distinguished Fellow (2016-2017)• GPA: 3.73• Thesis (Working Title): The Anatomy of Information Flow in Capital Markets during Earnings Season	Champaign, IL
	North Carolina A&T State University <ul style="list-style-type: none">• Bachelor of Science, Information Technology with a minor in Applied Mathematics (August 2012 – May 2016).• NASA MUREP Scholar (2013-2016),• LSAMP Research Scholar (2013-2016)• GPA: 3.9• Thesis: Predicting and Detecting Adverse Events with NuPIC	Greensboro, NC
Awards	<ul style="list-style-type: none">• Illinois Distinguished Fellow (2016-2020)• Associate GEM Fellow (2016-Present)• NASA MUREP Scholar (2013 – 2016)• Xerox Minority Technical Scholar (2015)• Outstanding Honors Student Award (2014)• Deans Circle (2014 – 2016)• Pearson Student Advisory Board (2014 – 2015)• LSAMP Scholar (2013 – 2015)• Goldman Sachs Undergraduate Camp participant (2013)• Alpha Lambda Delta Honor Society (2012 – 2016)• NC A&T Dean's List (2012 – 2016)	
Research Experience	Laboratory for Computation, Data, and Machine Learning @ UIUC <i>Advisor: Robert J. Brunner</i> <ul style="list-style-type: none">• Identifying deterministic behavior between firms in financial markets utilizing Transfer Entropy. (2019-Present)• Predicting Profitability Using Machine Learning. I was responsible for cleaning data, feature engineering, model selection, hyper parameter tuning, and presenting results (2017-Present)	Urbana, IL

- I lead a financial data collection initiative for the Department of Accountancy. (August 2016 – September 2017)
- As a research assistant I developed Standard Machine Learning Language (SML) which attempts to automate parts of machine learning using SQL like queries. (August 2016 – August 2017)

Air Force Research Laboratory

Dayton, OH

Advisor: James Patrick

As evidence from the Large Scale Visual Recognition Challenge ([ILSVRC](#)) Deep Learning (DL) techniques have become the de-facto standard for labeling objects in images with better than human-level performance however, large training datasets are required to achieve this performance. This makes it challenging to apply DL to small datasets and most likely in order to utilize DL for sparse datasets a reliance on synthetic training data will be required. As an intern I carried out experiments with CAFFE to determine the effect of using synthetic data when classifying objects in images. (June 2016 – August 2016)

NASA's Jet Propulsion Laboratory

Pasadena, CA

Advisor: Raghvendra Sahai

As an intern I investigated circumstellar matter in young and dying stars which potentially can aid the NASA Origins program in understanding the lifecycle of stars. I created an Application Program Interface (API) and pipeline to extract Far and Near ultraviolet (FUV and NUV) properties from Asymptotic Branch (AGB) Stars, computed summary and variability statistics, and developed a plotting program to view parameters from extracted AGB stars. AGB stars with high FUV/NUV emission and variability lead to signatures of Accretion related phenomena around the companions of an AGB Star. FUV variability is a strong indicator of X-Ray Emission. Thus our study enables us to generate a candidate list of AGB Stars for an X Ray Study. (June 2015 – August 2015)

NASA Ames Research Center

Moffett Field, CA

Advisor: Rodney Martin

Assessed a biologically inspired machine-learning algorithm called NuPIC with data from a new "Green" building known as "Sustainability Base" at NASA Ames Research Center. As an intern, I employed advanced machine learning algorithms and other statistical methods to detect adverse events in Sustainability Base's data and compared the performance against NuPIC. The algorithms are assessed by their ability to detect anomalies that occur in the future. (June 2014 – August 2014)

North Carolina A&T State University

Greensboro, NC

Advisors: Evelyn Sowell, Howard Hardiman

The goal of this research was to build a framework for a technological method that will prevent the occurrence of additional deaths and injuries during school shootings. Computer vision, anomaly detection, electromagnetic propulsion, and other aspects were explored as solutions to prevent school shootings. As a result of this research, a paper was published at IEEE's Southeast Con. (June 2013 – August 2015)

North Carolina A&T State University

Greensboro, NC

Advisor: Seongtae Kim

As an external research effort to link Herfindahl index to Game Theory which potentially can create an optimal model for selecting when studios should release their movies I assisted the department of mathematics as an undergraduate researcher. I was responsible for developing a tool to scrap and clean publicly available box office data. (December 2014 – May 2015)

North Carolina A&T State University

Greensboro, NC

Advisors: Howard Hardiman, Evelyn Sowell

The overall objective of this research is to assess NuPIC's ability to detect Solar Flares that occur in the future using data from NOAA. (August 2014 – May 2015)

**Teaching
Experience**

University of Illinois at Urbana Champaign, Urbana, IL

Foundations of Data Science (INFO 490), Teacher's Assistant

Assisted Robert J. Brunner in teaching Data Science and analytics to students across different departments on campus. I was responsible for lecturing during discussion sections, creating assignments, hosting office hours, and grading assignments and quizzes.

Data Analytics Foundations for Accountancy (ACCY 570), Teacher's Assistant

Statistical Analyses for Accountancy (ACCY 571), Teacher's Assistant

Assisted Robert J. Brunner in teaching Accountants about Data Science and analytics. I was responsible for creating assignments, hosting office hours, and grading assignments/final projects.

**North Carolina A&T State University, Computer Systems Technology Department
Greensboro, NC**

Applied Java Programming (CST 240), Head Teacher's Assistant

Assisted Howard V. Hardiman in teaching students about Java. This involved grading assignments, creating a headless VM environment for students to run their assignments on, hosting study sessions, and lecturing. (August 2015 – December 2015)

Undergraduate Research Project, Project Lead

I led a group of undergraduate underclassmen and early college students under the supervision of my academic advisors to develop a game utilizing a computer hardware sensor called Leap Motion that supports hand, and finger motions as input. The overall objective of this project was to help the underclassmen and early college students to enhance presentation skills, gain experience, critical thinking skills, and insights with computer programming. The game was written in C# and utilized Unity's game engine; this project was presented at an Annual Event called Extreme IT Day at North Carolina Agricultural and Technical State University. (January 2015 – March 2015)

Electrical Circuits I (ECT 211), Teacher's Assistant

Assisted my undergraduate academic advisor Howard V. Hardiman in teaching students about Electric Circuits. I graded assignments, protector exams, hosted study sessions, and lectured. (January 2013 – May 2013)

Applied Java Programming (CST 240), Teacher's Assistant

Assisted a Professor in teaching Students about Applied Java. I graded assignments, hosted study sessions, and perform non-instructional activities. (August 2013 – December 2013)

A&T STEM Summer Camp, Technology Camp Counselor

Taught 6th-12th graders about different topics in the STEM field. I also encouraged teenagers to pursue Science, Technology, Engineering, and Math in three separate week programs. (June 2013 – July 2013)

Presentations

“Predicting Profitability Using Machine Learning”, V.Anand; T.Sougannis; Ikegwu, K.M.; R, Brunner University of Illinois in Champaign, IL, (2019)

“Predicting Profitability Using Machine Learning”, Ikegwu, K.M. University of Illinois in Champaign, IL, (2018)

“Deep Learning with EO Synthetic Data”, Ikegwu, K.M. Wright State University in Fairborn, OH, (2 August 2016, 9 August 2016)

“Predicting and Detecting Adverse Events with NuPIC”, Ikegwu, K.M; Tran.D; Nguyen.T. NC A&T SU in Greensboro, NC. 5 May 2016

“Extracting FUV and NUV properties from AGB Stars”, Ikegwu, K.M. Jet Propulsion Laboratory in Pasadena, CA. 6 August 2015

“Exploring Technological Preventive Methods for School Shootings”, Ikegwu, K.M; Sowell, E.; Hardiman, H. IEEE SoutheastCon 2015 in Fort Lauderdale, FL. 9-12 April 2015

“Assessing Biologically Inspired Machine Intelligence”, Ikegwu, K.M; Kyaw.M. NASA Ames Research Center in Moffett Field, CA. July 2014

“Assessing NuPIC and the Cortical Learning Algorithm”, Ikegwu, K.M. NASA Ames Research Center (Remotely). 17 April 2014

“History of Operating Systems”, Ikegwu, K.M. North Carolina Agricultural and Technical State University in Greensboro, NC. 6 June 2013

“Why the STEM Field is fascinating”, Ikegwu, K.M. North Carolina Agricultural and Technical State University in Greensboro, NC. 6 June 2013

Publications

- Ikegwu, K; Trauger, J; Brunner, R; McMullin, J. PyIF: A Fast and lightweight implementation for computing Transfer Entropy on Big Data (2020). IEEE SoutheastCon 2020
- Anand, Vikrant and Brunner, Robert and Ikegwu, Kelechi and Sougiannis, Theodore, Predicting Profitability Using Machine Learning (October 8, 2019). Available at SSRN: <https://ssrn.com/abstract=3466478> or <http://dx.doi.org/10.2139/ssrn.3466478>
- Ikegwu, K.M; Sowell,E.; Hardiman, H. Exploring Technological Preventive Methods for School Shootings (2015). IEEE SoutheastCon 2015

Activities

- Illini Jujustu Member,
- Student IEEE Member,
- Pearson Student Advisory Board Member,

- Chess Club member,
- Alpha Lambda Delta Honor Society,
- NC A&T Association of Information Technology Professionals Member,
- Interests include reading, hiking, working out, personal finance, and cooking.

Languages

- C# (Prior Experience)
- JavaScript (Prior Experience)
- R (Prior Experience)
- C++ (Experienced)
- HTML5(Experienced)
- Python (Proficient)
- SQL (Proficient)

Skills/Tools

Proficient with:

- Anaconda
- Data Visualization
- Linux
- Machine Learning
- Jekyllrb
- Git
- Google Suite
- Latex
- Markdown
- Microsoft Office Suite
- Unreal Engine 4,
- VSCode

References

Available Upon Request