

JaCoya C. Thompson
910-734-5573
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<https://sites.google.com/u.northwestern.edu/jacoya/home>

EDUCATION

Northwestern University, Evanston IL

PhD, Computer Science, expected June 2022

Research: Designing learning environments to support exploration of data.

M.S., Earth and Planetary Sciences, December 2018

Thesis Title: Relative contributions of celestial tidal forces and meteorological influences on Very-long Period Seismic Noise in the North-American Mid-continent

Data Science Certificate, August 2020

Fayetteville State University, Fayetteville NC

B.S., Computer Science, Minor: Mathematics, Cum Laude, Dec 2012

M.S., Mathematics, July 2015

Thesis Title: Mathematical modeling and computer simulations used to study the dynamics of cancer immunotherapy

COMPUTER SKILLS

Python, D3, R, SPSS, SQL, Matlab, SpaCY, Sqlite, HTML, JavaScript, CSS, NCL, SAC, Generic Mapping Tools (GMT), AWK, Tableau, bash and C shell scripting

DATA SCIENCE METHODS/SKILLS

Graph Analytics: Neo4j, Spark+AI, GraphX

NLP/Machine Learning: Decision/Regression Trees, k-nearest neighbors (KNN), support vector machines, logistic regression, Classification (Non-linear logistic regression, Bayesian logistic regression, Gaussian Processes, Time series Analysis, Matched Filtering), singular value decomposition, Regression (Bayesian linear regression, Non-linear regression, Sparse linear regression).

PUBLICATIONS

Jones, S. T., **JC Thompson**, & Worsley, M. (2020). Data in Motion: Sports as a site for expansive learning. Computer Science Education, 1-34.

JC Thompson, Wu, S., & Mills, J. (2020, June). The Use of Computer Programming in a Secondary Mathematics Class. Paper Presentation. 2020 virtual ASEE Annual Conference & Exposition.
<https://peer.asee.org/35378>

G. A. Irgens & **JC Thompson**. (2020). "Would You Rather Have it be Accurate or Diverse?" How Male Middle-School Students Make Sense of Algorithm Bias. 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 2 (pp. 751-752). Nashville, Tennessee: International Society of the Learning Sciences.

V Tang, B Rösler, J Nelson, **JC Thompson**, A Lucas, S van der Lee. 2020. Earthquake Detective: Engaging Citizens in the Detection of Dynamically Triggered Seismic Events. Earth and Space Science Open Archive
M Perez, S Jones, **JC Thompson**, M Worsley. 2019. Data in motion: supporting youth interest in athletics through multimodal data analytics. XRDS: Crossroads, The ACM Magazine for Students 25 (4), 50-53

RESEARCH/SYMPOSIUM/SEMINAR PRESENTATIONS

JC Thompson, Using Python in an Advanced Placement Statistics Class. Virtual Poster. eCots 2020 virtual conference. <https://www.causeweb.org/cause/ecots/ecots20/posters/1-10>

JC Thompson, Sports Analytics: Learning Data Analytics through the use of Wearable Technologies and Sports. Poster Presentation. CRA 2019 URMD Workshop

JC Thompson, Van Der Lee S, Horton D, Analysis of Very Long-Period Noise at Flexible-Array Stations in the North-American Midcontinent. Poster Presentation. AGU 2018 Fall Meeting

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JC Thompson, Zammudio K, Scientific and Structural Grant Characteristics as Predictors of Funding Success. Oral Presentation. NSF Final Presentation. National Science Foundation. 2015

JC Thompson., Gillespie, P., A Predictive Analysis on the Graduation and Retention Rates in Science, Technology, Engineering and Mathematics at Fayetteville State University. Poster Presentation. NAAAS Conference. Baton Rouge LA. 2015

RESEARCH

Department of Energy

Knoxville TN

Oakridge National Labs

June 2021-August 2021

Built regression models to explain and examine the relationships of environmental & social variables, such as housing quality, race, and neighborhoods, on positive COVID-19 cases in Chicago IL area.

Data Diamonds

Evanston IL

April 2021-present

Designed and implemented a 5-session lessons on data visualizations for 6-8th grade girls using various data visualization tools.

Sports Sense

Evanston IL

Northwestern University

May 2021 – present

In collaboration with community based programs such as Digital Divas created by Dr. Nichole Pinkard and local school districts, machine learning curriculum is developed to introduce youth apart of the programs to STEM related experiences as it relates to physical movement and motion.

Data in Motion

Evanston IL

Northwestern University

January 2019-May 2021

Designing interfaces for Multimodal Learning Analytics (MMLA) signal processing. Using JavaScript and Python to create a web base tool to visualize various wearables data collection.

Invisible Institute's Citizen's Police Data Project

Evanston IL

Northwestern University

September 2019-December 2019

A quarter long project in collaboration with the Invisible Institute's Citizen's Police Data Project I explored how socio-demographic features such as race and ethnicity could play a role in the outcomes of police misconduct investigations.

CT-STEM

Evanston IL

Northwestern University

January 2019-June 2020

Under the advisement of Dr. Uri Wilensky and Dr. Michael Horn lessons are created using a series of Jupyter Notebooks in python for a 2-week unit in AP Statistics class.

Students learned descriptive statistics topics and engaged in a text-based programming language through debugging processes.

Zooinverse

Evanston IL

Citizen Science Project

August 2018- present

Project Title: Earthquake Detective: Engaging Citizens in the Detection of Dynamically Triggered Seismic Events

Collected, studied, and analyzed user submitted data to verify if volunteers can be trained to help researchers better understand seismic events and the conditions under which they occur.

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Earth and Planetary Science
Northwestern University

Evanston IL
August 2016- present

Project Title: Relative contributions of celestial tidal forces and meteorological influences on Very-long Period Seismic Noise in the North-American Mid-continent
Using seismic data collected in the Mid-West US region investigated non-seismic signals such as tidal weather and climate patterns effects on seismic related instruments.

National Science Foundation

Arlington VA
May 2015-Aug 2015

Project Title: Scientific and Structural Grant Characteristics as Predictors of Funding Success
Produce measurable characteristics that will generate successful grants
Using natural language processing with python analyzed submitted proposals to identify measurable characteristics that will generate successful grants and define how those measurable characteristics correlate with funding success.

NASA Langley

Hampton VA
June 2013-Aug 2013

Working under the supervision of Manjula Ambur the Head of Information Management Branch/OCIO and LaRC Chief Knowledge Officer at NASA Langley Research Center researching initiatives in big data and data mining.

McNair Scholars Program

Fayetteville NC
Mar 2012-Dec 2012

Title: A Predictive Analysis on the Graduation and Retention Rates in Science, Technology, Engineering and Mathematics at Fayetteville State University
Researching the retention and graduation rates of Stem majors at Fayetteville State University. Methodology used was based on statistical data collected during 2005-2011 academic school years.

TEACHING

Math Instructor
Shaw University

Raleigh NC
Jan. 2021 – present

Designed and implemented comprehensive lesson plans for college students. Instruct students, create lesson plans, assign and correct homework, manage students in the classroom.

ViaX 1on1 Instructor

Chicago IL
July 2020 - present

Taught various data science related topics such as machine learning methods and graph analytics. Weekly meeting with undergraduate student to provide guidance and advice about research topic.

SSIP Mentor
National Science Foundation

Evanston IL
June 2020 - August 2020

Weekly meetings with student apart of NSF's Summer Scholars Internship Program. Providing guidance and feedback to an undergraduate in STEM.

Teacher Assistant, Northwestern University
Tangible Interaction Design and Learning

Evanston IL
March 2020 - June 2020

Lead weekly meetings, graded coursework which consisted of weekly readings, discussions, labs, and projects. Provided feedback on the design of course and student projects.

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Teacher Assistant, Center for Talent Development
Data Detectives

Evanston IL
March 2019 - Jun 2019

Co-design and implemented lessons for a 6-week course on data science for 6-8th grade students using the programming language R with Golnaz Arastoopour Irgens an Assistant Professor of Learning Sciences at Clemson University.

Teacher, NAACP Summer Camp
Northwestern University

Naperville, IL
July 2018

Under the advisement of Dr. Dr. Michael Horn co-designed and implemented curriculum for an interactive coding program called TunePad, that helped students understand Python coding to create music.

Math Teacher, SandHoke Early College
Public Schools of Hoke County

Raeford NC
Jan 2015 - May 2016

Designed and implemented comprehensive lesson plans for grades 9-12th. Taught students in a manner that they could apply the knowledge and skills required for College and Career Readiness in accordance with the NC Schools Framework and Common Core Curriculum.

Math Teacher, Red Springs High School
Public Schools of Robeson County

Red Springs NC
Jan 2014 - Jan 2015

Designed and implemented comprehensive lesson plans for grades 9-12th. Taught Relations and Functions, Trigonometry, Algebra, Coordinate Geometry, Vectors and 3D Geometry, Statistics and Probability.

Professional Tutor, Robeson Community College
Open Math Lab

Lumberton NC
Jan 2013 - Aug 2013

Facilitate learning in mathematics as a guide and coach to assist the student to become a successful, independent learner.

Professional Tutor, Fayetteville State University
Student Support Services (SSS) Program

Fayetteville NC
Aug 2010 - May 2015

Provide individual and small group tutoring sessions in math. Facilitate learning as a guide and coach to assist the student to become a successful, independent learner.

Founder/Mentor
Buds of Promise

Fairmont NC
May 2011 - present

Coordinate and Mentor girls ages 10-15, of low-income backgrounds, by providing resourceful information that will build confidence and self-esteem. Provided mentees with tutoring in mathematics. Assist mentees with setting goals to achieve academic and personal success

Teacher Assistant, Fayetteville State University

Fayetteville NC
Jan. 2011 - May 2011

Attend lectures and assist the teacher in the instruction taught in the classroom to students. Schedule and maintain regular office hours to meet with students and Provided tutoring to students outside of class time.

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WORK EXPERIENCE

Project Manger	Chicago IL
Tutor Proof	Jan 2020 – present
Planning and overseeing implementation of tutor proof platform to ensure they are completed in a timely fashion and within budget, also keeping stakeholders informed the entire way.	
Community Specialist, Fayetteville State University	Fayetteville NC
Residence Life	Jan 2013 - May 2015
Assist in daily operations of the Office of Housing & Residence Life. Assist with the implementation of room and building inspections; help with determining accountability of students for damage; assess damage charges; process charges to student accounts. Provide presentations for the department and serve as a representative at conferences, admissions open house events, and other activities.	
Lab Technician, Fayetteville State University	Fayetteville, N.C.
ITTS	Jan. 2011 – Jan. 2013
Performs installation, operation, maintenance diagnoses and repair of the schools' hardware and software computer resources Aid in routine computer and peripheral maintenance and report problems with software and hardware to supervisors. Ensure users are complying with lab usage guidelines.	
Intern, Systems Support Specialist	Fayetteville NC
City of Fayetteville	Aug. 2010 - Dec. 2011
Performs installation, operation, maintenance diagnoses and repair of the city's hardware and software computer resources. Assist computer users at the Information Technology Department help desk. Installs personal computers and associated software and hardware necessary for operations throughout the organization.	

HONORS AND AWARDS

Black Compute Her Fellow	2021
IDEAS Fellow	Fall 2019,2020
GEM University Fellow	Fall 2016,2021
Quality Education for Minorities in Stem Scholar	Summer 2015
HBCU Master's Degree STEM Scholar	Fall 2013
Tutor of the Year	2013
Ronald E McNair Post Baccalaureate Achievement Scholar	Fall 2011
North Carolina Louis Stokes Alliance for Minority Participation	Fall 2012
Tau Sigma Honor Society	Fall 2009

AFFILIATIONS

CS PhD Advisory Council (CSPAC)	2020-present
Computer Science Social Initiative	2020-2021
NU CS Diversity Committee (student member)	2020-present
American Society for Engineering Education	2019-present
Association for Computing Machinery for Women (ACM-W)	2019-present
American Geophysical Union (AGU)	2018-present
Northwestern Graduate Schools Parental Advisory Board	2017-present
Women in Mathematics, Vice President	2012-2015
Association for Computing Machinery (ACM)	2011-present