

# Temidayo (Temi) Adeluwa



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*"My motivation lies in answering fundamental questions in areas of pharmacogenomics and precision medicine by using computational and machine learning/deep learning techniques alongside knowledge in statistical genomics and algorithms, and in the building of software that translates this knowledge."*

## EDUCATION

Sep 2021 - Present **PhD. Student in Genetics, Genomics, and Systems Biology** | The University of Chicago, IL, USA

Aug 2019 - July 2021 **M.Sc. Biomedical Sciences** | University of North Dakota, ND, USA

Nov 2012 - Dec 2016 **B.Sc. Pharmacology** | College of Medicine, University of Lagos, Lagos, Nigeria  
First class (Honors) | GPA 4.72/5.00 (3.81/4.00)  
Best Graduating Student in the department (Rank: 1/~70)  
Second Best Graduating Student in the college (Rank: 2/~400)

## EXPERIENCE

(Research related)

Aug 2019 - July 2021 **Graduate Research Assistant** | University of North Dakota, ND, USA

Advisor: Dr. Junguk Hur

- **Project:** I explored how some clinical information can contribute to PPD (postpartum depression) in women by using data mining techniques on a postpartum depression (PPD) dataset. This study resulted in a co-first author publication.
- **Project:** I integrated gene expression, drug information, and adverse event reporting information of various drugs to design models that can predict drug-induced liver injury. I also worked on a model-voting method that uses predicted probabilities to improve classification accuracy. This study resulted in a publication, poster presentation and a conference talk.
- **Project:** I applied a Particle Swarm Optimization algorithm with a Gradient Boosting Machine algorithm to classify cell segmentation data. This resulted in a conference presentation at the 2021 IEEE Symposium Series on Computational Intelligence (SSCI).
- **Project:** Using computational and deep learning methods, I investigated genome-wide targets of core pluripotency genes and how they change during neuroectoderm and mesodermal differentiation.
- **Rotation project:** Using metabolomic signatures, I applied machine learning techniques to build models that could classify patients who are positive with amyotrophic lateral sclerosis (ALS) from patients that do not have the disease. I gave a departmental seminar presentation on this project.

July 2014 - Oct 2016 **Undergraduate Researcher** | College of Medicine, University of Lagos, Lagos, Nigeria

Co-supervisors: Dr. Ismaila Ishola & Dr. Akinwunmi Akinyede

- I was appointed as the Director of Studies. Alongside a team, I organized Pharmacology and Chemistry tutorials which resulted in an improvement in students' overall academic performance.
- I provided research assistance to various students on diverse projects in both the Pharmacy and Pharmacology departments including using statistical software to analyze data.
- **Project:** I examined potential new mechanisms of action of vinpocetine in paraquat-induced Parkinsonism in mice and studied how vinpocetine might be beneficial in alleviating some symptoms of Parkinsonism. This study resulted in a publication.

## EXPERIENCE

(Non-research related,  
gap years)

Feb 2019 - Jul 2019 **Graduate Trainee** | Sterling Bank Plc., Nigeria

Aug 2018 - Jan 2019 **Content Writer/Head of Admissions/Social media and email marketer** | Hotels.ng

Jul 2017 - Aug 2018 **I worked in the pharmacy department** | 68 Nigerian Army Reference Hospital, Yaba, Lagos, Nigeria

Jul 2017 - Aug 2017    **I managed the pharmacy** | Luxe Pharmacy, Sabo Yaba, Yaba, Lagos, Nigeria

## SKILLS & TOOLS

\* *Beginner* | \*\* *Intermediate* | \*\*\* *Proficient*

Programming	R*** (alongside statistics), Python**, Bash/Linux**, C/C++*
Data mining	Caret***, mlr** & Keras** in R; SciKit-Learn**, TensorFlow**, PyTorch* & Mxnet* in Python
Database management	SQL*
Research	Machine learning/Graph Neural Networks, Pharmacogenomics/Precision medicine, Statistical genetics, Algorithms
Certifications	<ul style="list-style-type: none"><li>[1] Data Science: Foundations using R (Coursera; Johns Hopkins University)</li><li>[2] Artificial Intelligence Fundamentals (Data Science &amp; Artificial Intelligence Academy; Sterling &amp; Coven Works)</li><li>[3] Professional Certificate in Data Science (edX; Harvard University)</li><li>[4] Applied Data Science with Python Specialization (Coursera; University of Michigan)</li><li>[5] Mathematics for Machine Learning (Coursera; Imperial College London)</li><li>[6] Learn SQL Basics for Data Science (Coursera; UC Davis)</li><li>[7] Python Programmer (DataCamp)</li><li>[8] Google IT Automation with Python (Coursera; Google)</li><li>[9] Bioinformatics Methods I &amp; II (Coursera; University of Toronto)</li><li>[10] Deep Learning Specialization (Coursera; deeplearning.ai)</li><li>[11] TensorFlow 2 for Deep Learning Specialization (Coursera; Imperial College London)</li><li>[12] Object-Oriented Programming in Java Specialization (Coursera; UC San Diego, Duke University)</li></ul>

## AWARDS & HONORS

- [1] Provost Award for the Best Graduating Student in Pharmacology for the 2016/2017 Academic Session
- [2] Association of Pharmacology Students of the University of Lagos Award for the Most Outstanding Student
- [3] Certificate of Excellence/Merit for the Best Graduating Students of the College of Medicine and the Faculty of Pharmacy
- [4] University of Lagos Outstanding Scholars Award (\$150 annually for four years)

## PUBLICATIONS

\* *Equal contribution/first or co-first authorship*

- [1] **Adeluwa T\***, McGregor BA\*, Guo K, Hur J. Predicting Drug-Induced Liver Injury Using Machine Learning on a Diverse Set of Predictors. *Front Pharmacol*. 2021;12:648805. Published 2021 Aug 18. doi:10.3389/fphar.2021.648805
- [2] Shin D\*, Lee KJ\*, **Adeluwa T\***, Hur J. Machine Learning-Based Predictive Modeling of Postpartum Depression. *J Clin Med*. 2020;9(9):2899. Published 2020 Sep 8. doi:10.3390/jcm9092899
- [3] Ishola IO, Akinyede AA, **Adeluwa TP\***, Micah C\*. Novel action of vinpocetine in the prevention of paraquat-induced parkinsonism in mice: involvement of oxidative stress and neuroinflammation. *Metab Brain Dis*. 2018;33(5):1493-1500. doi:10.1007/s11011-018-0256-9

## TALKS & PRESENTATIONS

\* *Equal contribution/first or co-first authorship*

- [1] **Temidayo Adeluwa\***, Brett A. McGregor\*, Kai Guo, and Junguk Hur (2020), *Predicting Drug-Induced Liver Injury with Machine Learning Incorporating a Diverse Set of Public Datasets*. Cold Spring Harbor Laboratory (CSHL) Biological Data Science. November 4-6, 2020. Virtual. (Poster)
- [2] **Temidayo Adeluwa\***, Brett A. McGregor\*, Kai Guo, and Junguk Hur (2020). Annual International Conference on Critical Assessment of Massive Data Analysis (CAMDA 2020) - July 13-14, 2020. Virtual. (Oral)
- [3] Standard Prescription Writing (A call for Teamwork) (2017). An oral presentation given in the presence of military commanders at the 68 Nigerian Army Reference Hospital proposing a change to the structure and content of the prevailing prescription; 20 October, 2017 (Oral).
- [4] Peptide Therapeutics: Current Status and Future Directions. Department of Pharmacology, University of Lagos; 22 July, 2016 (Seminar presentation).

[5] Recent Developments in Adenosine Receptor Ligands and Their Potentials as Novel Drugs. Department of Pharmacology, University of Lagos; August 25, 2016 (Seminar presentation).