Ogenna Esimai

Computer Science and Engineering (CSE)
The University of Texas at Arlington (UTA)
Arlington, TX
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http://biomecis.uta.edu/~ogenna/ https://ogennaesimai.github.io/ https://github.com/ogennaesimai https://www.linkedin.com/in/ogennaesimai

Education	Ph.D., Computer Science; UTA, Arlington, TX	(Expected May 2022)
& Clinical	Advisor: Dr. Jean Gao	Fall 2017 - present

Training Research Interests: Deep Learning, Data Integration, Data Mining

Integration of Biomedical Data Using Deep Learning

-Developing a novel approach to the integration of long, non-coding

ribonucleic acid (IncRNA) and messenger RNA (mRNA) data.

Honors B.S., Computer Science, magna cum laude

Jan. 2014 - May 2017

Jointly with graduation from Honors College; UTA

Pediatric Infectious Diseases Fellowship July 2008 - June 2011

Michigan Medicine, Ann Arbor, MI

Pediatric Residency July 2006 - June 2008

Akron Children's Hospital (ACH), Akron, OH

Pediatric Internship June 2005 - July 2006

University of Texas Southwestern Medical Center/Children's

Medical Center (CMC), Dallas, TX

M.D., Medicine Aug. 2001 - May 2005

University of Alabama School of Medicine – Birmingham,

Birmingham, AL

B.S., Biochemistry. Department Rank: 001/005 Jan. 1997 - May 2001

The University of Texas at Arlington, Arlington, TX

Technical Skills Programming languages: C, R, Python, Java, MATLAB, SQL, C++, HTML

Software Applications/Models: MPI, Git, TORA, LaTeX, Keras, COCOMO, SVN, TeXworks, Secure File Transfer Protocol (SFTP), Secure Shell Client (SSH), operating system (OS)

virtualization (VirtualBox), StarUML, GraphPad Prism, Google TensorFlow

Operating Systems: Windows 10, Windows 7, Linux (Ubuntu, openSUSE, Fedora, CentOS),

Android.

Application Environments/Integrated Development Environments: Anaconda Navigator, Spyder, Android Studio, Microsoft Visual Studio Express, Code::Blocks, Nano, Vim, NetBeans.

Laboratory/Experimental methods: sterile technique, bacterial culture, plate overlay assay of bacterial growth, Fluorescence-Activated Cell Sorting (FACS), PCR, mouse nasopharyngeal colonization, mouse nasopharyngeal washes

Awards and Honors

Fellow, Graduate Assistance in Areas of National Need (GAANN) '21 Spr., Sum.; '20; '19; '18; '17 **Fellow**, G. Irene and Fernando G. Torgerson Graduate Studies 2018, '17

Advancement Fund/ Honors Bridge to Graduate School

Scholar, Virtual Grace Hopper Celebration	2021
Scholar, Virtual Grace Hopper Celebration (Microsoft)	2020
Scholar, ACM Richard Tapia Celebration of Diversity in Computing (ServiceNow)	2020
Scholar, Society of Women Engineers, Cummins, Inc. Scholarship	2018
Scholar, UTA Outstanding Student Leader Scholarship	2018
Scholar, Golden Key International Honour Society at UTA Chapter	2018
Scholar, National Society of Black Engineers (NSBE) BCA/Major/Fellows	2018
Scholar, Charlie and Mollie Daniels Family Endowed Scholarship 2021, '19, '	18, '17
Scholar, NSBE Dallas/Fort Worth Professionals Chapter Scholarship	2017
Scholar, Tapia Poster Presenter Scholarship	2015
Scholar, Stuart Moldaw Scholarship 2016, 4	′15, ′14
Scholar, Mineral District Medical Society (MDMS) Scholarship, Birmingham, AL 20	03, '02
Scholar, Louis Stokes Alliance for Minority Participation (LSAMP) Research	2000
Scholar, Outstanding Mentor Scholarship, UTA-HOSTS! (Helping Other Students	2000
to Succeed)	
Scholar, University Scholar Award, Office of the President, UTA 200	00, '99
Scholar, Laurence E. Baker Memorial Premedical Scholarship, UTA 2001, '	00, '99
Scholar, UTA Outstanding Freshman Scholarship 2001, '00, '0	99, '98
Awardee, UTA, Outstanding Student Leader Award 20	18, '17
Awardee, Boys and Girls Club of Arlington, Overall Volunteer of the Year, Main Branch	2017
Awardee, Thank You Award, BGCA, Main Branch	2017
Awardee, Best in Class Award, Professional Practices, senior-level CSE class of 35 students	2016
UTA, Professor Ron Cross, Class Professor	
Awardee, UTA/Biomedical Engineering Student Society (BMESS), First Place Team	2016
member UTA/BMESS Medical Hackathon	
Awardee, NIH/NMA Travel Award, National Medical Association Annual Meeting and	2009
Scientific Sessions, Las Vegas, Nevada	
Awardee, Fellow Award in Basic Science Research, Annual Pediatric Research Symposium,	2009
Division of Pediatrics and Communicable Diseases, University of Michigan Health System,	
Ann Arbor, MI, "The Broad Spectrum Inhibitory Activity of a Streptococcus pneumoniae	
Strain is Mediated by Bacteriocins Which Can Be Purified."	
Awardee, J. Kramer Research Award, Annual Postgraduate Research Day, ACH	2008
"LukE-LukD Patterns in Invasive and Non-Invasive Isolates of Community-Associated	
Methicillin-Resistant Staphylococcus aureus (CA-MRSA) Infection at Akron, Ohio."	
Awardee, Resident of the Month, ACH, OH, Staff-Nominated during PL-2 year.	2006

Awardee, Above and Beyond Award, Peer-Nominated for performance during PL-I	
Night Float rotation, CMC, Dallas.	
Awardee, Above and Beyond Award, Peer-Nominated for performance during PL-I	2006
PICU rotation, CMC, Dallas.	
Awardee, Finalist Award, Short-term Research Project, Annual Medical Student	2002
Research Day, UASOM- Birmingham	
Awardee, Best Presentation Award, Article Selective, Class of 2005 MS-I Clinical	2002
Nutrition Course.	
Honoree, TBP, UTA Eta Chapter, Tau Beta Pi, the Engineering Honor Society (top 20%)	2016
Honoree, UPE, UTA Texas Gamma Chapter, Upsilon Pi Epsilon, the Intl. Honor Society	2016
for the Computing and Information Disciplines (top 35% or higher)	
Honoree, Alpha Chi, National College Honor Society (top 10% of class)	1999
Honoree, GK, Golden Key International Honour Society (top 15% of class)	1999
Honoree, ODK, Omicron Delta Kappa, the National Leadership Honor Society	1999

Publications

& Peerreviewed works

- **5. Ogenna Esimai** and Jean Gao. **(2020)** Integration of Bioinformatics Data Using Deep Learning. ACM Richard Tapia Celebration of Diversity in Computing, September 16 19, 2020, virtual. Doctoral Consortium. Accepted.
- **4.** Wholey W-Y, Abu-Khdeir M, Yu EA, Siddiqui S, **Esimai O** and Dawid S. **(2019)** Characterization of the Competitive Pneumocin Peptides of *Streptococcus pneumoniae*. *Front. Cell. Infect. Microbiol*. 9:55. doi: 10.3389/fcimb.2019.00055.
- **3. O. Esimai**, M. Shchepetov, J. Weiser, S. Dawid. **(2010)** Abstract. "The Broad Spectrum Inhibitory Activity of a *Streptococcus pneumoniae* Strain is Mediated by Pneumocins Which Can Be Purified." American Society for Microbiology (ASM) 110th General Meeting, San Diego, CA. May 2010. 10-GM-A-2941-ASM.
- **2. O. Esimai**, M. Shchepetov, J. Weiser, S. Dawid. **(2010)** Abstract. "The Broad Spectrum Inhibitory Activity of a *Streptococcus pneumoniae* Strain is Mediated by Bacteriocins Which Can Be Purified." Pediatric Academic Societies' Annual Meeting, Vancouver, BC, Canada. E-PAS2010:4340.2.
- **1.** Vila-Carriles WH, Kovacs GG, Jovov B, Zhou ZH, Pahwa AK, Colby G, **Esimai O**, Gillespie GY, Mapstone TB, Markert JM, Fuller CM, Bubien JK, Benos DJ. **(2006)** Surface expression of ASIC2 inhibits the amiloride-sensitive current and migration of glioma cells. *J Biol Chem*. 2006 Jul 14;281(28):19220-32. Epub 2006 May 16.

Selected

Reproduced a Peer-Reviewed and Published RNA Sequence Analysis Project

Research

-Gained hands-on experience of work involved in RNA sequence analysis.

Experiences

-Increased skill set in previously unfamiliar area.

& Projects

-Advanced my research domain knowledge.

Personal Online Learning Project

4/2019

1 - 6/2020

- -Learned the basics of a new programming language.
- -Earned University of Michigan Python Basics Certificate on Coursera (see Licensures & Certifications section).

TensorFlow by Google Project; MNIST handwritten dataset

12/2017

-Implemented single and multi- hidden layer regular neural network and convoluted neural network algorithms to classify a dataset.

MATLAB Project; AT&T face image & MNIST handwritten datasets

11 - 12/2017

- -Implemented data handling routine to extract subsets from datasets.
- -Implemented data handling routine to generate data files for extracted data subset.
- -Implemented linear regression classifiers with and without regularization.
- -Predicted class labels & calculated accuracy of above linear regression classifiers for training and test data.

Distributed Research Experiences for Undergraduates (DREU)

6 - 8/2014

Advisor: Dr. Nancy Amato; Texas A&M University (TAMU), CSE Dept., College Station.

- -Researched in robotic motion planning applied to computational biology and biochemistry.
- --http://dreuarchive.cra.org/2014/Esimai/
- -Presented, 2014 TAMU Undergraduate Summer Research Grants (USRG) Poster Session.
- -Presented research poster, 2015 ACM Richard Tapia Celebration of Diversity in Computing.

Undergraduate Research Assistant

10/2013 - 5/2014

Advisor: Dr. Chengkai Li; UTA, CSE Dept., Arlington, TX.

- -Implemented algorithm that extracts all the word tokens from an XML PubMed article.
- -Presented at 2014 National Conference on Undergraduate Research (NCUR).

Pediatric Infectious Diseases Fellow

(2 years total) 7/2008 - 6/2011

Advisor: Suzanne Dawid, M.D., Ph.D., Michigan Medicine, Ann Arbor, MI -Worked to characterize the functions of the *blp* locus of the bacterium *Streptococcus pneumoniae* which is centrally involved in the inhibitory versus non-inhibitory competitive nature of different strains of this microorganism. (Publication listed in Publications section.) (Research Award listed in Awards and Honors section).

Pediatric Resident 2007 - 2008

Advisor: John Bower, M.D., Akron Children's Hospital (ACH), Akron, OH -Worked to determine the presence or absence of *lukD-lukE* in methicillin-resistant *Staphylococcus aureus* strains isolated at ACH. (Research Award listed in Awards and Honors section).

Medical Student Sum. 2003

Advisor: Dr. Dale J. Benos, Univ. of AL at Birmingham, Department of Physiology -Worked to determine if or not the mechanism of decrease in proliferation of glioma brain cancer cells by 5-Aza-2'-deoxycytidine (AzaC) and glycerol involved apoptosis. (Publication listed in Publications section.) (Research Award listed in Awards and Honors section.)

Louis Stokes Alliance for Minority Participation (LSAMP)

8/2000 - 5/2001

Research Scholar

Advisor: Dr. Edward Bellion, UTA, Department of Chemistry and Biochemistry

- -Invited by Biochemistry professor to apply for research position.
- -Worked to characterize the nitrate reductase enzyme of the bacterium *Methylobacterium extorquens*.

Medical Grant Support NIAID T32-HD07513, Principal Investigator - Janet R. Gilsdorf, M.D., Pediatric 7/2010 - 6/2011

Infectious Diseases Program Director, Department of Pediatrics, UMHS,

2010 Cellular and Molecular Biology in Pediatrics Training Program, 50% effort, Research Mentor-Dr. Suzanne Dawid. Please see award immediately below for further details. \$48,440.

NIAID T32-HD07513, Principal Investigator - Janet R. Gilsdorf, M.D., Pediatric 7/2009 - 6/2010

2009 Cellular and Molecular Biology in Pediatrics Training Program, 95% effort,

Research Mentor-Dr. Suzanne Dawid. I will work to determine the role of *Streptococcus pneumoniae* genes of the 6B strain in the broadly active locus

with regard to inhibitory activity and immunity by deletional analysis.

Infectious Diseases Program Director, Department of Pediatrics, UMHS,

In addition, I will purify the active peptides in order to determine their spectrum of activity with the eventual goal of evaluating their therapeutic potential by using them to clear mouse colonization and prevent sepsis. \$51,904.

Akron Children's Hospital Foundation Grant, Principal Investigator- self, 7/2009 - 6/2010

Research mentor-Dr. John Bower. Completed 90% of project work, My role involved writing a research proposal, applying for the grant, passing grant application through IRB review process, carrying out basic laboratory research work including classifying and sub-culturing *Staphylococcus aureus* cultures and conducting medical records/chart review, compiling study results, writing a research paper, presenting my research findings at the annual ACH Postgraduate Research Day, and as required by the Foundation, writing a

summary report. Funding amount \$7520.

NHLBI 5T35HL007473-22, Principal Investigator – David E. Briles, M.D., 6/2002 - 8/2002

Dept. of Microbiology, Univ. of Alabama at Birmingham, Short-term Training in Health Professional Schools Program, completed 100% of project, Research Mentor-Dr. Dale J. Benos. My role involved submitting an application with grant proposal, carrying out basic laboratory research work including generating growth curves portraying the effects of 5-Aza-2'-deoxycytidine (AzaC) and glycerol on the proliferation of glioma cells and using fluorescein isothiocyanate (FITC) conjugation of proteins explored the hypothesis that the decrease in proliferation occurs via an apoptotic mechanism. Presented my research findings at Annual UASOM Medical Student Research Day. Funding amount and total cost – stipend of ~\$1500/month.

Medical Scientific Activities	ific "The Inhibitory Spectrum of a <i>Streptococcus pneumoniae</i> Strain May be Mediated		
	Poster Presentation , Abstract 10-GM-A-2941-ASM, American Society for Microbiology (ASM), 110 th General Meeting, San Diego, CA. "The Broad Spectrum Inhibitory Activity of a <i>Streptococcus pneumoniae</i> Strain is Mediated by Pneumocins Which Can Be Purified."	2010	
	Platform Presentation , Abstract E-PAS2010:4340.2, Pediatric Academic Societies (PAS) Annual Meeting, Vancouver, BC, Canada. "The Broad Spectrum Inhibitory Activity	2010	
	of a <i>Streptococcus pneumoniae</i> Strain is Mediated by Bacteriocins Which Can Be Purified.' (not accepted) Clinical Case, ID Images Session of the Pediatric Fellows' Day, Infectious Diseases Society of America (IDSA) Annual Meeting co-sponsored by Pediatric Infectious Diseases Society (PIDS).	2010	
	Plenary Session Oral Presentation, Fellow Award in Basic Science Research, Annual Pediatric Research Symposium, UMHS. "Survival of the Fittest: The Broad Spectrum Inhibitory Activity of a <i>Streptococcus pneumoniae</i> Strain is Mediated by Bacteriocins Which Can Be Purified."	2009	
	(not accepted) Clinical Case, ID Images Session of the Pediatric Fellows' Day, Infectious	2009	
	Diseases Society of America (IDSA) Annual Meeting, co-sponsored by PIDS.		
Licensures &	Certificate of Achievement, Intro to Software Engineering Course by CodePath.org	2021	
Certifications	Certificate of Leadership, Android Development Course for UTA by CodePath.org	2021	
	Certificate of Achievement, Tech Fellow Training for UTA by CodePath.org	2020	
	Certificate of Achievement, Remote Android Development Course by CodePath.org	2020	
	Certificate , Python Basics by University of Michigan on Coursera (viewable on LinkedIn)	2019 2019	
	Certificate, Information Systems Security Professionals, NSTISSI No. 4011		
	and System Administrators, CNSSI No. 4013E (Granted by Dr. Jiang Ming, UTA)		
	Board Certification , General Pediatrics, Diplomate of the American Board of Pediatrics, exp. 2015	2008	
	Physician Identifier, National Provider Identifier, #1871711721	2007	
Selected	Tech Fellow , CodePath's Professional Android Course at UTA 1 - 5	1 - 5/2021	
Teaching	-introduced CodePath, a non-profit tech education organization, to UTA and vice versa.	,	
Experiences	-recruited a colleague Tech Fellow, with whom facilitated the learning of professional		
•	Android app development for college graduate and undergraduate students.		
	-with 40 students enrolled, course exceeded minimum enrollment requirements by 60%		
	-next long semester, number of free CodePath courses offered at UTA doubled		
	Graduate Teaching Assistant ; UTA, CSE Dept For each course, assisted a Professor in		
	-Theoretical Concepts in Computer Science and Engineering 8 - 1	2/2019	
	Graded deliverables, proctored exams, held office hours, communicated complex		
	concepts in understandable terms to answer questions for 63 students.		
	-Theoretical Concepts in CSE. Performed above for 63 students 7 - 8	8/2019	
	-Discrete Structures. Performed above for 45 students. 1 - 9	5/2019	
	-Theoretical Concepts in CSE. Performed above for 64 students. 8 - 1	2/2018	

International Talk, Taught Neonatal Resuscitation Program (NRP) to a class of	3/2008
physicians, physician assistants, nurses, nursing aides, and operating room staff at	
Karolyn Kempton Memorial Christian Hospital/L'Hopital Baptiste Biblique, Tsiko,	
Togo during a pediatric residency elective.	

International Talk, Taught NRP to a class of nursing students at Karolyn Kempton Memorial Christian Hospital/ L'Hopital Baptiste Biblique, Tsiko, Togo during a pediatric elective.

3/2008

Peabody Gross Anatomy Fellow, UASOM. Facilitated Gross Anatomy 8 - 12/2002 learning for a group of four MS-1 students who shared a cadaver.

Teaching Assistant, Gross Anatomy for Optometry students. Facilitated 11 - 12/2001 Gross Anatomy learning for a group of five second-year Optometry students who shared a cadaver.

Math Clinic Tutor, Dept. of Mathematics, UTA. Taught other tutors 1/1998 - 5/2001 Elementary Statistics. Tutored college students in Pre-Algebra, Algebra, Trigonometry, Elementary Statistics, Calculus I, II, and III, and Business Mathematics.

Leadership

President, Golden Key International Honour Society (GKIHS), UTA

-Led Chapter along with officers and Advisors from previous year's Silver Chapter

Award to a higher Gold Chapter Award measuring how well Chapter met

international society standards.

-Conducted detailed extensive group officer and one-on-one President with President-Elect transition meetings as investment into continuity of Chapter success.

-Contributed via transition groundwork to success of Chapter. In year succeeding my tenure, new President led Chapter along with officers and Advisors to a higher Key Chapter Award.

Webmaster, Tau Beta Pi, the Engineering Honor Society, Eta Chapter, UTA 2017 - 2018

- -Maintained Chapter website after determining protocol to access site maintenance.
- -Prepared written report for Chapter for protocol to access website's maintenance.
- -Held transition meeting with incoming Webmaster.

Programs Chair, National Society of Black Engineers (NSBE), UTA

2017 - 2018

- -Originated and implemented a point system for UTA NSBE to reward members for participating in activities that will contribute to their personal development and success as Engineering students.
- -Originated and implemented a two-part mentoring system, firstly for students to participate as mentors and/or mentees among ourselves and secondly for students to participate as mentees to be mentored by experienced professionals.
- -Originated and promoted novel idea to NSBE Regional Programs Chair who approved of Chapter representation at 2017 American Heart Association Tarrant County Heart

Walk, Fort Worth, TX, Sept. 9, 2017.

-Planned and organized event and a collaboration with GKIHS to have its Chapter representation at this Heart Walk.

Senator, NSBE, UTA Spr. 2017

-Voted on national and regional ballots for local UTA Chapter at NSBE National Convention.

Sales Associate, ROSS Stores #0249

11/2012 - 7/2017

Front End Supervisor, Supervised Front End of store where multiple Sales Associates checked out customers.

Markdown Team Lead, Led Markdown team. Trained over 5 new team members **Fitting Room Associate (FTA) Trainer**, Trained over 5 new FTAs on correct rack arrangement and other Fitting Room procedures.

Stock Room Associate (SRA)Trainer, Trained over 5 new SRAs on running hummers and blue bins to place processed merchandise correctly on sales floor.

Stock Room Associate, As team player processed merchandise arrivals in preparation for display on sales floor. Fitting Room Associate, Checked customers in and out of the Fitting Room.

Sales Associate, Provided customer service to customers in purchases and returns with computer-generated performance evaluations in top category of 90% or better frequently.

Markdown Associate, Processed price reductions, price adjustments, re-ticketing of items, and merchandise organization with computer-generated performance reports in top category of 90% or better ~ 99% of the time.

Selected
Outreach &
Volunteer
Experiences

Volunteer Tutor & Academic Mentor, Boys and Girls Clubs of Arlington, Main Branch, now Boys and Girls Clubs of Greater Tarrant County -Empowered children of whom at least 90% were from demographics underrepresented STEM during Power Hour, a homework help program to assist community children, to complete their homework and increase their skills and confidence.

Session Leader and Presenter, Engineering Saturday, UTA

4/14/2018

2016 - 2019

-Designed and presented 3 sessions "Building Tall, Edible Towers" as a NSBE representative for a STEM outreach program held by the UTA College of Engineering in which elementary through high school students engaged in hands-on activities designed to be fun and intriguing. Delivered session assisted by four NSBE volunteers.

Honors College Advocate, Honors College, UTA

2016 - 2018

-Spoke to audiences of prospective and admitted UTA students and their parents/guardians about my experiences as a member of the Honors College and answered their questions.

	Volunteer, 4-H	2017 - 2018	
	Volunteer, Society of Hispanic Professional Engineers (SHPE)	8/17/2016	
	Freshman/International Orientation, UTA		
	Volunteer, Center for Mexican American Studies Technology	5/21/2016	
	Center Workshop Science Day with SHPE involvement, UTA		
	Volunteer, Engineering Saturday with SHPE, UTA	4/9/2016	
	Volunteer, Engineering Saturday, UTA	9/20/2015	
	Volunteer, Alzheimer's Association, Annual Walk with UTA Honors Colleg	ge 10/3/2016	
	Volunteer, American Heart Association	2015 - 2017	
	Volunteer Physician, Samaritan's Purse, World Medical Mission	7/2011 - 1/2012	
	-Volunteered at Mukinge Hospital, Kasempa, Zambia		
	-Diagnosed and cared for patients including newborns		
Professional	ACM, Association for Computing Machinery 2020 - 9/2	9/2021, '17 - '18, 2014 - '16	
Affiliations	SWE, Society of Women Engineers	2014 - 6/2021	
	NSBE, National Society of Black Engineers	2014 - present	
	SHPE, Society of Hispanic Professional Engineers	019 - 6/2021, 2015 - '18	
Selected	Grace Hopper Celebration, virtual	9/2021	
Conferences	Texas Health Informatics Alliance Conference, virtual	9/2021	
	ACM Richard Tapia Celebration of Diversity in Computing, virtual	9/2020	
	Grace Hopper Celebration, virtual	9/2020	
	International Conference on Machine Learning (ICML), virtual	7/2020	
	Computing Research Association CRA-WP Grad Cohort for URMD, Austi	in, TX 3/2020	
	UTA Student Computing Research Festival (SCRF) Lightning Talk present	ter and 2/2020	
	Demo presenter, Arlington, TX		
	ACM Richard Tapia Celebration of Diversity in Computing,	2/2015	
	"Using Motion Planning to Study Ligand Binding" poster presenter, Bosto	on, MA	
	National Conference on Undergraduate Research (NCUR), "A Dynamic	4/2014	
	Faceted Search Interface for PubMed" poster presenter, Lexington, KY		