

Ogenna Esimai

Computer Science and Engineering (CSE)
The University of Texas at Arlington (UTA)
Arlington, TX
E-mail: ogenna.esimai@mavs.uta.edu

<http://biomecis.uta.edu/~ogenna/>
<https://ogennaesimai.github.io/>
<https://github.com/ogennaesimai>
<https://www.linkedin.com/in/ogennaesimai>

Education & Clinical Training	Ph.D., Computer Science; UTA, Arlington, TX	(Expected May 2024)
	Advisor: Dr. Jean Gao	Fall 2017 - present
	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 (lncRNA) and messenger RNA (mRNA) data.	
	Honors B.S., Computer Science, <i>magna cum laude</i> Jointly with graduation from Honors College; UTA	Jan. 2014 - May 2017
	Pediatric Infectious Diseases Fellowship Michigan Medicine, Ann Arbor, MI	July 2008 - June 2011
	Pediatric Residency Akron Children's Hospital (ACH), Akron, OH	July 2006 - June 2008
	Pediatric Internship University of Texas Southwestern Medical Center/Children's Medical Center (CMC), Dallas, TX	June 2005 - July 2006
	M.D., Medicine University of Alabama School of Medicine – Birmingham, Birmingham, AL	Aug. 2001 - May 2005
	B.S., Biochemistry. Department Rank: 001/005 The University of Texas at Arlington, Arlington, TX	Jan. 1997 - May 2001

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 Advancement Fund/ Honors Bridge to Graduate School	2018, '17
	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, '15, '14
	Scholar , Mineral District Medical Society (MDMS) Scholarship, Birmingham, AL	2003, '02
	Scholar , Louis Stokes Alliance for Minority Participation (LSAMP) Research	2000
	Scholar , Outstanding Mentor Scholarship, UTA-HOSTS! (Helping Other Students to Succeed)	2000
	Scholar , University Scholar Award, Office of the President, UTA	2000, '99
	Scholar , Laurence E. Baker Memorial Premedical Scholarship, UTA	2001, '00, '99
	Scholar , UTA Outstanding Freshman Scholarship	2001, '00, '99, '98
	Awardee , UTA, Outstanding Student Leader Award	2018, '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 member UTA/BMESS Medical Hackathon	2016
	Awardee , NIH/NMA Travel Award, National Medical Association Annual Meeting and Scientific Sessions, Las Vegas, Nevada	2009
	Awardee , Fellow Award in Basic Science Research, Annual Pediatric Research Symposium, Division of Pediatrics and Communicable Diseases, University of Michigan Health System, Ann Arbor, MI, "The Broad Spectrum Inhibitory Activity of a <i>Streptococcus pneumoniae</i> Strain is Mediated by Bacteriocins Which Can Be Purified."	2009
	Awardee , J. Kramer Research Award, Annual Postgraduate Research Day, ACH "LukE-LukD Patterns in Invasive and Non-Invasive Isolates of Community-Associated Methicillin-Resistant <i>Staphylococcus aureus</i> (CA-MRSA) Infection at Akron, Ohio."	2008
	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.	2006
Awardee , Above and Beyond Award, Peer-Nominated for performance during PL-I PICU rotation, CMC, Dallas.	2006
Awardee , Finalist Award, Short-term Research Project, Annual Medical Student Research Day, UASOM- Birmingham	2002
Awardee , Best Presentation Award, Article Selective, Class of 2005 MS-I Clinical Nutrition Course.	2002
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 for the Computing and Information Disciplines (top 35% or higher)	2016
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

- & Peer-reviewed works**
- 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.
 - 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.
 - 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.
 - 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.
 - 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 Research Experiences & Projects	<p>Reproduced a Peer-Reviewed and Published RNA Sequence Analysis Project 1 - 6/2020</p> <ul style="list-style-type: none"> -Gained hands-on experience of work involved in RNA sequence analysis. -Increased skill set in previously unfamiliar area. -Advanced my research domain knowledge. <p>Personal Online Learning Project 4/2019</p> <ul style="list-style-type: none"> -Learned the basics of a new programming language. -Earned University of Michigan Python Basics Certificate on Coursera (see Licensures & Certifications section).
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- 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) 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 <i>Methylobacterium extorquens</i> .	8/2000 - 5/2001
Medical Grant Support	NIAID T32-HD07513 , Principal Investigator - Janet R. Gilsdorf, M.D., Pediatric 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.	7/2010 - 6/2011
	NIAID T32-HD07513 , Principal Investigator - Janet R. Gilsdorf, M.D., Pediatric Infectious Diseases Program Director, Department of Pediatrics, UMHS, 2009 Cellular and Molecular Biology in Pediatrics Training Program, 95% effort, Research Mentor-Dr. Suzanne Dawid. I will work to determine the role of <i>Streptococcus pneumoniae</i> genes of the 6B strain in the broadly active locus with regard to inhibitory activity and immunity by deletional analysis. 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.	7/2009 - 6/2010
	Akron Children's Hospital Foundation Grant , Principal Investigator- self, 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 <i>Staphylococcus aureus</i> 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.	7/2009 - 6/2010
	NHLBI 5T35HL007473-22 , Principal Investigator – David E. Briles, M.D., 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.	6/2002 - 8/2002

Medical Scientific Activities	Poster Presentation , Abstract, Annual Pediatric Research Symposium, UMHS. "The Inhibitory Spectrum of a <i>Streptococcus pneumoniae</i> Strain May be Mediated by Two Pneumocins that Differ in Their Dependence upon Novel Genes."	2010
	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 of a <i>Streptococcus pneumoniae</i> Strain is Mediated by Bacteriocins Which Can Be Purified."	2010
	(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 Diseases Society of America (IDSA) Annual Meeting, co-sponsored by PIDS.	2009
Licensures & Certifications	Certificate of Achievement , Intro to Software Engineering Course by CodePath.org	2021
	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
	Certificate , Information Systems Security Professionals, NSTISSI No. 4011 and System Administrators, CNSSI No. 4013E (Granted by Dr. Jiang Ming, UTA)	2019
	Board Certification , General Pediatrics, Diplomate of the American Board of Pediatrics, exp. 2015	2008
Selected Teaching Experiences	Physician Identifier , National Provider Identifier, #1871711721	2007
	Tech Fellow , CodePath's Professional Android Course at UTA	1 - 5/2021
	-introduced CodePath, a non-profit tech education organization, to UTA and vice versa.	
	-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 - 12/2019
	--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 - 8/2019
	- Discrete Structures . Performed above for 45 students.	1 - 5/2019
	- Theoretical Concepts in CSE . Performed above for 64 students.	8 - 12/2018

	International Talk , Taught Neonatal Resuscitation Program (NRP) to a class of 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.	3/2008
	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 learning for a group of four MS-1 students who shared a cadaver.	8 - 12/2002
	Teaching Assistant , Gross Anatomy for Optometry students. Facilitated Gross Anatomy learning for a group of five second-year Optometry students who shared a cadaver.	11 - 12/2001
	Math Clinic Tutor , Dept. of Mathematics, UTA. Taught other tutors Elementary Statistics. Tutored college students in Pre-Algebra, Algebra, Trigonometry, Elementary Statistics, Calculus I, II, and III, and Business Mathematics.	1/1998 - 5/2001
Leadership	<p>President, Golden Key International Honour Society (GKIHS), UTA</p> <p>-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.</p> <p>-Conducted detailed extensive group officer and one-on-one President with President-Elect transition meetings as investment into continuity of Chapter success.</p> <p>-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.</p>	2017 - 2018
	<p>Webmaster, Tau Beta Pi, the Engineering Honor Society, Eta Chapter, UTA</p> <p>-Maintained Chapter website after determining protocol to access site maintenance.</p> <p>-Prepared written report for Chapter for protocol to access website's maintenance.</p> <p>-Held transition meeting with incoming Webmaster.</p>	2017 - 2018
	<p>Programs Chair, National Society of Black Engineers (NSBE), UTA</p> <p>-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.</p> <p>-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.</p> <p>-Originated and promoted novel idea to NSBE Regional Programs Chair who approved of Chapter representation at 2017 American Heart Association Tarrant County Heart</p>	2017 - 2018

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.

2016 - 2019

Session Leader and Presenter, Engineering Saturday, UTA

4/14/2018

-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) Freshman/International Orientation, UTA	8/17/2016
	Volunteer, Center for Mexican American Studies Technology Center Workshop Science Day with SHPE involvement, UTA	5/21/2016
	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 College	10/3/2016
	Volunteer, American Heart Association	2015 - 2017
	 Volunteer Physician, Samaritan's Purse, World Medical Mission -Volunteered at Mukinge Hospital, Kasempa, Zambia -Diagnosed and cared for patients including newborns	 7/2011 - 1/2012
Professional Affiliations	ACM, Association for Computing Machinery	2020 - 9/2021, '17 - '18, 2014 - '16
	SWE, Society of Women Engineers	2014 - 6/2021
	NSBE, National Society of Black Engineers	2014 - present
	SHPE, Society of Hispanic Professional Engineers	2019 - 6/2021, 2015 - '18
Selected Conferences	Grace Hopper Celebration, virtual	9/2021
	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, Austin, TX	3/2020
	UTA Student Computing Research Festival (SCRF) Lightning Talk presenter and Demo presenter, Arlington, TX	2/2020
	ACM Richard Tapia Celebration of Diversity in Computing, "Using Motion Planning to Study Ligand Binding" poster presenter, Boston, MA	2/2015
	National Conference on Undergraduate Research (NCUR), "A Dynamic Faceted Search Interface for PubMed" poster presenter, Lexington, KY	4/2014