Gazi Salah Uddin Nuhash

Genomics | Neurosciences | Bioinformatics

+1 (806) 834 – 3199 | | | | | gazi.nuhash@ttu.edu

Canton & Main Experimental Sciences Building, Room 101, Mail Stop 3132,
Texas Tech University, Lubbock, Texas 79409, United States

SUMMARY

Driven, ambitious and self-motivated researcher with a strong background in Alzheimer's disease (AD), Mouse Handling, Aseptic Surgery, CRISPR-Cas9 Systems, Mammalian Cell Culture (HEK293), Next-Generation Sequencing (NGS), Molecular and Gene Cloning, Immunofluorescence, Immunohistochemistry, Computer-Aided Drug Design (CADD), Bacterial Cell Culture (*Vibrio cholerae, Klebsiella, E. coli*), Coliphage Culture, and NGS data analysis. Academically distinguished life sciences graduate with exceptional leadership abilities, adept at public speaking, teamwork, and effective communication. Seeking to pursue further academic opportunities to make a difference within my field, harness my potential, and find a cure for Alzheimer's disease.

EDUCATION

Master of Science in Biotechnology *August 2025 – Present | Expected graduation: May 2027*

Texas Tech University | Center for Biotechnology & Genomics Lubbock, Texas, United States

- Master's thesis, in progress — 'Molecular Fingerprints in Natural Products to Address Alzheimer's disease – A Computational Approach.'
  Supervisor: Chiquito J. Crasto, PhD
- Research Concentration in Life Sciences
- Current GPA — 4.00/4.00

Bachelor of Science in Biochemistry and Biotechnology *May 2018 – August 2022 | Graduation: December 2024*

North South University | Department of Biochemistry and Microbiology Dhaka, Bangladesh

- Bachelor's thesis — 'Mutational Analysis of SARS-CoV-2 genomes of isolates from Nepal'
  Supervisor: Muhammad Maqsud Hossain, PhD
- Graduated ***cum laude*** — achieving a position in the top 5% of my class.
- CGPA — 3.51/4.00
  U.S. Equivalency Credential verified by World Education Services (WES) [CxC-ICAP | GPA — 3.51/4.00]

RESEARCH & EMPLOYMENT HISTORY

Graduate Research Assistant *September 2026 – Present*

Texas Tech University | Center for Biotechnology & Genomics Lubbock, Texas, United States

Supervisor: Chiquito J. Crasto, PhD

- Investigating Alzheimer's disease (AD) associated molecular fingerprints by identifying disease-relevant changes in gene expression, protein abundance, cellular pathways, and molecular biomarkers.
- Analyzing biological and genomic datasets to characterize molecular signatures linked to amyloid-β pathology, tau dysregulation, neuroinflammation, synaptic dysfunction, and neuronal degeneration.
- Processing, curating, and quality-controlling experimental and omics datasets using Python, R, Excel, and bioinformatics tools such as Gaussian to ensure accurate, reproducible downstream analysis.
- Preparing publication-quality figures, statistical summaries, heatmaps, pathway visualizations, and data tables for laboratory meetings, research posters, manuscripts, and presentations.

Student Assistant — assisted the student body through customer service and more. *March 2026 – August 2026*
Texas Tech University | Hospitality Services Lubbock, Texas, United States

Research Assistant *July 2024 – February 2026*
Advanced Bioinformatics, Computational Biology and Data Science Laboratory, Bangladesh Chittagong, Bangladesh
Supervisor: Md. Junaid, MS

- Led computational and medicinal chemistry projects investigating small-molecule modulators relevant to neurodegenerative disease pathways – integrating organic, physical, and biophysical chemistry principles in hypothesis-driven study design.
- Identified several tau kinases linked to neurodegeneration as targets through various mechanistic investigations – including virtual screening, cheminformatics, biophysics, and computational chemistry.
- Performed molecular dynamics simulations using GROMACS and VMD to observe drug-target interactions – providing
  critical insights into drug efficacy and stability.
- Collaborated with and mentored peers and junior researchers in applying chemical reasoning to experimental design, data analysis, and scientific communication, including guiding them through problem-solving strategies.

Assistant Lab Manager — developed policies, provided operational oversight and more. *July 2024 – February 2026*
Advanced Bioinformatics, Computational Biology and Data Science Laboratory, Bangladesh Chittagong, Bangladesh

Junior Research Collaborator *August 2023 – June 2024*
Advanced Bioinformatics, Computational Biology and Data Science Laboratory, Bangladesh Chittagong, Bangladesh

- Discovered potential drug candidates by exploring natural products – leading to novel avenues in drug design & discovery.
- Identified and validated key proteins and enzymes as potential targets for therapeutic interventions.
- Utilized Computer-Aided Drug Design (CADD) techniques to discover innovative drug interactions – enhancing the efficiency of the drug development process.

Project Manager *July 2022 – July 2023*
Wholesome Alive, LLC. Wilmington, Delaware, United States (Remote)

- Oversaw end-to-end project planning and execution, including scoping, timeline development, resource allocation, and cross-functional coordination to ensure on-time, on-budget delivery.
- Led data analytics efforts to translate complex quantitative findings into actionable insights, using dashboards, reports, and forecasts to guide strategic and operational decisions.
- Managed project finances by developing and tracking budgets, monitoring expenditures, and reporting on financial performance to stakeholders while identifying opportunities for cost optimization.

Research Intern *February 2020 – June 2022*
North South University | NSU Genome Research Institute (NGRI) Dhaka, Bangladesh
Supervisor: Muhammad Maqsud Hossain, PhD

- Collaborated on multiple projects to collect and analyze data – including antibiotic resistance trends against *Vibrio cholerae*, and SARS-CoV-2 genome sequencing using NGS.
- Investigated mutations and clusters in the SARS-CoV-2 genomes of all available isolates from Nepal – informing public health strategies.
- Successfully extracted, cultured, and maintained *Vibrio cholerae*, *Klebsiella* spp., and Coliphage – ensuring reliable and reproducible research results.

Laboratory Assistant (Lab-Star) *August 2019 – January 2020*
North South University | Department of Biochemistry and Microbiology Dhaka, Bangladesh

- Assisted faculty and lab instructors during practical classes by reinforcing experimental protocols, demonstrating techniques, and supporting student learning.
- Helped maintain laboratory readiness through reagent preparation, basic equipment care, and organization of workspaces while promoting good housekeeping practices.
- Supported peers with one-on-one and small-group tutoring, emphasizing lab safety guidelines, proper use of PPE, and accurate data recording and interpretation.

MANUSCRIPTS

- **Nuhash GSU**, Crasto, C.J. 'Molecular Fingerprints in Natural Products to Address Alzheimer's disease – A Computational Approach.' (In Preparation)
- **Nuhash GSU**, Junaid, M. 'Machine Learning-Based Drug Discovery of GSK3β Inhibitors against Alzheimer's disease through Natural Products to reduce Tau Hyperphosphorylation.' (In Submission)
- **Nuhash GSU**, Junaid, M. Lamellarins: An Updated Review of Sources, Synthesis, Pharmacology, Pharmacokinetics and Toxicity.' (In Submission)
- Pantho AF, Ashraf AHMZ, Ahmed R, **Nuhash GSU**, Afroze SH, Kuehl TJ, Hossain L, Uddin MN. 'Revivify Attenuates Inflammatory & Oxidative Stress.' (In Review)
- Pantho AF, Ashraf AHMZ, Ahmed R, **Nuhash GSU**, Afroze SH, Kuehl TJ, Hossain L, Uddin MN. 'Revivify Boosts Immunity by Activating B and T Cell Population in an *in vitro* Cell Model Study.' (In Review)

CONFERENCES, CERTIFICATIONS & TRAINING

- Aseptic Surgery — Collaborative Institutional Training Initiative (CITI Program) [2026 – 2030]
- Working with Mice in Research — Collaborative Institutional Training Initiative (CITI Program) [2026 – 2029]
- Responsible Conduct of Research — Collaborative Institutional Training Initiative (CITI Program) [2025]
- Alzheimer's Association International Conference, *AAIC 2025 and 2024* — Toronto [2025] & Philadelphia [2024]
- Hands-on training in 'Next-Generation Pathogen Sequencing' — Child Health Research Foundation [2025]
- Artificial Intelligence (AI) Tools for Academic Research — ABCD Laboratory, Bangladesh [2024]
- Hands-on training in 'Computer-Aided Drug Design' — ABCD Laboratory, Bangladesh [2023]
- Training on Bioinformatics for Biotechnology Research — National Institute of Biotechnology [2021]

CORE COMPETENCIES & RESEARCH INTERESTS

- Neurodegeneration
- Bioinformatics
- System Biology
- Neuropharmacology
- Genomics
- Single-cell sequencing
- Molecular Biology
- Proteomics
- Clinical Biochemistry
- Quantum Chemistry
- Cheminformatics
- Animal & Cellular Models

HONORS, AWADRS & SCHOLARSHIPS

- Exchange Scholar of KL-Youth Exchange & Study, 'YES Programs' in TX—U.S. Dept. of State (DOS) [2013 – 2014]
- Graduate School Competitive Tuition Scholarship — Texas Tech University [2025 – 2026]
- Vice President of Operations — NSU Bioscience Club, North South University [2020 – 2022]
- 'Full-tuition Scholarship' for brilliant performance in the admission test — North South University [2018 – 2022]
- 'Merit Scholarship' for exceptional performance in Higher Secondary Certificate (HSC) examination — Board of Intermediate & Secondary Education, Dhaka [2017 – 2022]
- Quarter-Finalist of 'Public Speaking' at Asian English Olympics (AEO)—BINUS University, Jakarta, Indonesia [2016]
- Winner of 'English Presentation' at 2nd & 3rd National English Carnival—Notre Dame College, Dhaka [2016 & 2017]

- Winner of 'Science Project' at Sustainable Science Education Using STEM — DOS & Notre Dame College [2016]
- Winner of 'Environmental Presentation' at 2nd International Nature Summit — Notre Dame College, Dhaka [2016]
- Winner of 'Concept Presentation' at 7th National Nature Summit — Notre Dame College, Dhaka [2016]
- Winner of 'Digital Presentation' at 12th National Language Festival — St. Joseph High School, Dhaka [2015]
- 'Most Improved Player' of Varsity Tennis Team — Copperas Cove High School, TX [2014]
- 'Honored Guest' of the State of Texas — Recognition conferred by Governor Rick Perry [2014]

SKILLS

Laboratory Skills: Next-Generation Sequencing (NGS), Western Blot, SDS-PAGE, PCR, RT-qPCR, ELISA, DNA/RNA Extraction and Purification, Mammalian Cell Culture (HEK293), Bacterial Cell Culture (*Vibrio cholerae, Klebsiella, E. coli*), Flow Cytometry, Cell Sorting, Animal Husbandry, Mouse Handling and Sampling, Aseptic Surgery, gRNA Design and validation, Lentiviral Plasmid Construction using CRISPR-Cas9 systems, Molecular and Gene Cloning, Immunofluorescence, Immunohistochemistry, HPLC, Protein Extraction, Responsible Conduct of Research, and Laboratory Safety

Computational Skills: Machine Learning (ML), NCBI Toolkit, MEGA, GROMACS, NAMD, VMD, Discovery Studio, Computer-Aided Drug Design (CADD), Gaussian, Chimera, MGL Tools, PyMOL, AutoDock Vina, Open Babel, Genome Annotation, Data Mining, Artificial Intelligence (AI)

Programming Languages: Python (*Intermediate*), C/C++ (*Advanced*), R (*Beginner*)

Statistical Skills: Microsoft Excel, SPSS, R

Languages: English: Fluent — IELTS Overall Band Score: 8.0 / 9.0 (*January 2024*) and Bengali (Native)

Leadership Skills: Public Speaking, Visionary and Ethical Leadership, Project Management, Interpersonal Relations, Budget Analysis, Strategic Thinking, Conflict Resolution

REFEREES

Chiquito J. Crasto, PhD
Research Professor
Manager, Bioinformatics Core
Center for Biotechnology & Genomics
Texas Tech University
Canton & Main Experimental Sciences
Building, Room 116, Mail Stop 3132
Lubbock, Texas 79409, United States
Email: chiquito.crasto@ttu.edu
Phone: +1 806 834-5448

Muhammad Maqsud Hossain, PhD
Director
NSU Genome Research Institute (NGRI)
Professor
Department of Microbiology
(Formerly Dept. of Biochemistry and Microbiology)
North South University
Plot 15, Block B, Room SAC 614,
Bashundhara, Dhaka 1229, Bangladesh
Email: muhammad.maqsud@northsouth.edu
Phone: +880 2 5566 8200 (Ext: 1903)

Md. Junaid, MS
Founder and Principal Investigator
Advanced Bioinformatics, Computational Biology and Data Science Laboratory, Bangladesh
(ABCD Laboratory, Bangladesh)
House 24, Road 01, Ward 26, Block B,
North Halishahar Housing Estate,
Chittagong 4226, Bangladesh
Email: md.junaid@abcdlabbd.org
Phone: +880 168 188 8411

Jatindra N. Tripathy, PhD, MBA
Professor of Practice
Graduate Advisor of the MS in Biotechnology Program
Center for Biotechnology & Genomics
Texas Tech University
Canton & Main Experimental Sciences
Building, Room 103, Mail Stop 3132,
Lubbock, Texas 79409, United States
Email: jatindra.n.tripathy@ttu.edu
Phone: +1 806 834-1837