

# KwanHo An

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LinkedIn : [www.linkedin.com/in/kwanho-an-25b2ba1b1](https://www.linkedin.com/in/kwanho-an-25b2ba1b1) | Portfolio : <https://kh7939.github.io>

## Education

**Masters of Science(M.S.) | McWilliams School of Biomedical Informatics at UTHealth Houston**

- **Major: Biomedical Informatics - Research Track**

- Fall 2023 - Spring 2025 | GPA : 4.0/4.0

- Courses : Bioinformatics, Statistics, Health Data Science, Big data analysis, Deep Learning, RDBMS(SQL), NoSQL, Visualization(Tableau)

**Bachelor of Science(B.S.) | McNeese State University**

- **Major: Medical Laboratory Science**

- Fall 2017 - Spring 2020 | Graduated *magna cum laude* (3.86/4.00 GPA)

## Technical Skills & Tools

**Programming & Data Analysis & visualization**

- Python, R, SQL (PostgreSQL, Snowflake), MongoDB, Tableau, Jupyter Notebook, JSON

**AI & Bioinformatics**

- Linux, Docker, AlphaFold3, ESM-IF, PyTorch, ChimeraX, Protein Data Bank (PDB), ProteinMPNN, FoldX, USCS Genome Browser, GENCODE, bedtools, ClinVar

**Lab & Workflow Management**

- LIMS, LabVantage, GitHub/GitLab

## Experience

**Graduate Research Assistant (AI Antibody Engineering) | UTHealth Houston | Jan 2024 – May 2025**

- Performed data cleaning and applied deep learning models (inverse folding, AlphaFold3, structural and functional metrics) to design antibodies targeting influenza H1 and H3 subtypes.
- Engineered monoclonal antibodies for cancer immunotherapy using AI-driven mutation strategies to optimize structural and functional properties through CDRH3 modifications.

**Medical Laboratory Scientist II | Natera (Sequencing team) | Aug 2022 – July 2023**

- Performed NGS, MLPA, FraX and Confirmation by using Nova Seq 6000(Illumina) and Capillary Electrophoresis 3730 (Thermo Fisher) instruments.
- Reviewed sequencing data and ensured QC compliance via LIMS.

**Lead, Medical Laboratory Scientist | Natera (Extraction team) | Dec 2020 – Aug 2022**

- Oversaw daily lab operations, including troubleshooting and sample case management to identify and resolve stuck cases, trained new hires, and collaborated with supervisors to ensure timely sample processing.

**Medical Laboratory Scientist I | Natera (Extraction team) | July 2020 – Dec 2020**

- Performed plasma isolation, both automated and manual DNA extraction, and DNA dilutions (TECAN, QIAGEN)

## Projects

**Bioinformatics Python projects (GitHub: <https://github.com/kh7939>)**

- Developed Python scripts for DNA sequence analysis, including GC content, motif detection, transcription and translation.
- Built a deep learning model for Acute Lymphoblastic Leukemia (ALL) image classification.

**Antibody design using AI (Graduate Research Assistant at UT Health Houston)**

- Applied AI-driven methods to design antibodies targeting specific antigens, focusing on CDRH3 optimization to boost binding affinity.

**HBB Gene (Sickle Cell Disease) Analysis**

- Utilized UCSC Genome Browser, ClinVar, and various genomic data formats (BAM, SAM, GFF3, VCF) to analyze HBB gene variants and assess their clinical implications.

## Licensure and Certifications

**Board of certificate - MLS (Medical Laboratory Scientist) (ASCP)CM**

- ASCP(American Society for Clinical Pathology) certified. KwanHo An, MLS(ASCP)CM