

DION LIU

Bioinformatics & Medical AI Engineer

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EXPERIENCE

Hon Hai Precision Industry Co., Ltd. (Foxconn) — AI Engineer 2025.09 - Present

Engineering clinical AI solutions with hospital collaborators, centered on multi-modal modeling for Alzheimer's disease.

- Alzheimer's Disease Multi-Modal Modeling (2025.09 - Present)

National Yang Ming Chiao Tung University — Master of Science in Biomedical Informatics 2023.09 - 2025.10

Graduate training centered on multi-omics analysis, data integration, and biomarker discovery using machine-learning approaches. Developed end-to-end analytical workflows—from pipeline construction to downstream processing, visualization, and result interpretation.

- pymaftools & Adenosquamous (2024.09 - 2025.10)
- Xenium Spatial RNA (2024.07 - 2024.09)
- Adenocarcinoma multi-omics analysis (2024.01 - 2024.06)

Gorigin Biomed Co., Ltd. — Bioinformatics Engineer 2021.10 - 2022.08

Responsible for developing automated NGS/qPCR gut microbiome reporting pipelines on GCP, performing preprocessing and analysis using QIIME2 and pandas, generating visualizations with matplotlib and Seaborn, and delivering JSON-based results for frontend rendering, alongside literature review and web scraping to optimize workflows.

- Automated NGS/qPCR Reporting System (2021.10 - 2022.08)

National Taiwan Ocean University — Bachelor of Science in Bioscience and Biotechnology 2017.09 - 2021.06

Studied organic chemistry, biochemistry, molecular biology, and standard wet-lab experimental techniques. Joined a structural bioinformatics laboratory, where I began working with protein structure analysis and gained my first experience in computational biology.

SKILLS

Bioinformatics: Bioinformatics, Genomics (DNA), Cancer Genomics, WES Pipelines, CNV Analysis, Mutational Sig., Transcriptomics, Bulk RNA, Spatial Tx, scRNA-seq, Methylation, Microbiomics, Multi-omics, Medical Imaging

Data Science: Data Analysis, Processing, Databases, EDA, Visualization

Machine Learning: Modeling, Model Usage, Deep Learning, Feature Eng., Validation, GenAI / LLM

Engineering & DevOps: Engineering, Linux / Ops, Version Control, CI/CD & Workflow, Packaging, Infrastructure

Web Development: Web Dev, Frontend, Backend

SELECTED PROJECTS

pymaftools github.com/xu62u4u6/pymaftools

Python-based toolkit for analyzing and visualizing somatic mutations in MAF format, optimized for cancer WES data.

Xenium Spatial RNA Cell Segmentation

In-progress tool for spatial transcriptomics cell segmentation and spatial-feature matrix preprocessing from Xenium outputs.

16S Microbiome Analysis & Taxonomy Refinement Pipeline

Building a full 16S microbiome analysis pipeline integrating QIIME2, DADA2, MAFFT, FastTree, and BLAST-based NCBI taxonomy refinement. The workflow covers primer trimming, quality assessment, denoising, ASV construction, taxonomic classification, phylogenetic tree generation, alpha diversity analysis, and species-level collapsing, with clean CSV outputs and custom visualizations using matplotlib. Designed for reproducible, config-driven processing of gut microbiome datasets on Linux/GCP environments.

Alzheimer's Disease Multi-Modal Modeling

Developing a multi-modal AI system for Alzheimer's disease by integrating multi-plane MRI deep-learning models, radiomics features, and volumetric information. Built an automated MRI preprocessing pipeline, modular training framework, and fusion methods combining slice-level CNN probabilities with tabular signals for improved diagnostic performance.