

I-SHU WANG

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EDUCATION

Carnegie Mellon University	Pittsburgh, PA
<i>Master of Science in Quantitative Biology And Bioinformatics - Advanced Study</i>	Dec 2023
Relevant Courses: Programming for Scientists, Data Analysis for Biological Sciences, Machine Learning, Algorithms & Advanced Data Structures, *Deep Learning (*Fall Semester)	
National Taiwan University	Taipei, Taiwan
<i>Master of Science in Biochemical Science & Technology</i>	Jun 2020
National Chung Cheng University	Chiayi, Taiwan
<i>Bachelor of Science in Biomedical Science; Certificate in Functional Genomics Program</i>	Jun 2018

EXPERIENCE

Carnegie Mellon University	Pittsburgh, PA
<i>Graduate Researcher</i>	Present
<ul style="list-style-type: none">Built a pipeline using Snakemake and parallel programming for analyzing alternative splicing on RNA-seq dataConduct comprehensive data analysis to draw conclusive insights on expression levels from sequencing dataDeveloped an interactive web application to display the isoform categories for each gene in all samples	
NGS High Throughput Genomics Core, Academia Sinica	Taipei, Taiwan
<i>Research Assistant</i>	Aug 2021
<ul style="list-style-type: none">Operated and maintained Illumina sequencers to get high quality sequencing dataDemultiplexed sequencing data and used Fastqc to examine quality of data	
Department of Biochemical Science & Technology, National Taiwan University	Taipei, Taiwan
<i>Graduate Researcher</i>	Jun 2020
<ul style="list-style-type: none">Earned Excellence Award from 2020 Agricultural Chemical Society of Taiwan Annual Poster Competition SessionsResearched Basic Local Alignment Search Tool (BLAST) and NCBI to build plasmid for gene knockout systemAnalyzed sanger sequencing data by Vector NTI to check success of gene editing	
National Taiwan University	Taipei, Taiwan
<i>Teaching Assistant</i>	Jan 2019
<ul style="list-style-type: none">Collaborated with a team of 4 to teach and train over 30 students to learn experimentsDesigned project outline and moderated discussion for students' final projects	

SKILLS

Computational skills: Python, Go Language, SQL, R, Linux, git, AWS, Google Cloud Platform

Bioinformatics Tools: NCBI, BLAST, TCGA, Snakemake, Bioconductor, BioPython, alignment tools, annotation tools

Data Analysis: Numpy, Pandas, SciPy, Seaborn, Statsmodels, plotly, ggplot, Matplotlib, PyTorch, dash, Shiny

ACADEMIC PROJECTS

Carnegie Mellon University	Pittsburgh, PA
A python script for bacterial genome analysis	Oct 2022
<ul style="list-style-type: none">Created a Python script that perform a series of processes from examining whole genomics for bacteria, translating DNA sequences to protein sequences, to using BLAST to compare the protein sequences with database	
Data analysis and visualization	Dec 2022
<ul style="list-style-type: none">Performed statistical analysis on cancer research using Python and presented the results through effective visualization	
Simulation of intercellular viral infection via cell-to-cell transmission	Dec 2022
<ul style="list-style-type: none">Built a model for users to input parameters based on biological data to simulate viral spread in cells using Go languageDeveloped multiple unit test cases in Go language to ensure model accuracy and functionality	
Construction of a Transcriptome Assembly and Annotation Pipeline	Apr 2023
<ul style="list-style-type: none">Used high-performance computer in cloud environment to analyze whole genome sequences of mammalsIntegrated RNA data from related specie to annotate unannotated specie, enhancing accuracy of gene annotation	
Analysis of differential gene expression and pathway enrichment in multiple cancers	Apr 2023
<ul style="list-style-type: none">Conducted analysis of differential gene expression to identify common gene signatures in multiple cancers using R programming language and TCGA databasePerformed gene clustering for each cancer using Python to elucidate relationship between cancer and pathways	