Merit Ghodrat

Bioinformatics and Public Health

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PROFILES

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PROFESSIONAL SUMMARY

A highly motivated and detail-oriented professional in public health science, specializing in bioinformatics, data science, and health-related machine learning applications. Passionate about advancing healthcare and public health initiatives through computational tools and data-driven research, with experience in genomic research, data analysis, and computational biology.

EDUCATION

Moorpark College May 2027
Bachelor of Science in Bioinformatics & Public Health
GPA: 3.85
• Dean's List
• Phi Theta Kappa Honor Society
• National Society of Leadership and Success
• Relevant Coursework: General Biology, General Chemistry, Organic Chemistry, Calculus, Physics, Statistics, Linear Algebra, Python Programming

Moorpark College May 2024
A.S. Chemistry, A.A in Natural Science
GPA: 3.85

Oak Park High School May 2022
High School Diploma

SKILLS

Software Proficiency
Proficient in Python, R, MS Word, Excel, PowerPoint.

Data Analysis and Machine Learning
Experienced in data analysis, algorithm development, and machine learning for solving complex problems in genomics and computational biology, supporting insights in public health and biomedical research.

Adaptable
Quickly adjusts to changing environments, tasks, and priorities. Demonstrates flexibility in learning new skills, handling challenges, and thriving in dynamic settings.

Communication
Skilled in active listening, collaborating with diverse teams, and presenting complex concepts to both technical and non-technical audiences.

WORK EXPERIENCE

Lightbox Dec 2024 - Present
Data Engineer - Intern Remote
• Built and managed data pipelines to efficiently process and analyze large datasets, including shapefiles for mapping and spatial data management.
• Improved workflows and ensured data accuracy, streamlining processes and enhancing data reliability.
• Used Python to automate tasks, manage complex data systems, and support scalable data-driven solutions.
• Created visual reports and insights to make complex data and trends understandable and actionable.

LifeArc October 2024
Research Intern Remote
• Completed a one month program focusing on advancing healthcare by designing and optimizing fibroblast-to-sensory neuron differentiation protocols and conducting bioinformatics analysis for gene expression.
• Contributed to improving differentiation efficiency, supporting experimental designs that may inform future biomedical applications.

PROJECTS

Machine Learning 3D Prediction of Protein Using Amino Acid Sequence
• Developed a TensorFlow neural network to predict 3D protein structures from amino acid sequences, encoding amino acids as numeric vectors.
• Trained the model using linear regression and Adam optimizer, visualizes protein structures with spheres and connecting lines, supporting insights into protein folding relevant to health sciences.
• Skills: TensorFlow, NumPy, Matplotlib, Python

Tumor Malignancy Predictive Model
• Developed a custom neural network from scratch, implementing ReLU and Sigmoid activations, backpropagation, and gradient descent for precise weight optimization.
• Designed and implemented a comprehensive machine learning pipeline to preprocess and normalize the Wisconsin Breast Cancer Dataset, achieving 98% accuracy in classifying cancer diagnoses (benign vs. malignant).
• Created advanced performance evaluation tools, including confusion matrix visualizations and dynamic loss tracking, to rigorously assess and refine model predictions over 67,000 iterations.
• Skills: Python, Matplotlib