Vahid Shariati

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Languages: English (Fluent), Italian (Good), French (Basic), Persian (Native)

Professional Summary

Highly accomplished Senior Bioinformatician with over 10 years of experience specializing in computational genomics. Proven expertise in developing custom pipelines and applying AI in key genetic elements and drug discovery.

Education

PhD in Genomics
Ph.D., Sant' Anna University of Advanced Studies, Pisa, Italy, 2007 – 2010. *Top student*

Professional Experience:

Senior Bioinformatician, Genome Center, National Institute of Genetic Engineering and Biotechnology, 2018-Present
- Conducted population genome diversity, pan and core genome analysis in human and other species
- Developed and implemented novel algorithms for the identification and annotation of genetic variants
- Collaborated with biologists and clinicians to provide bioinformatics support for research projects
- Conducted data mining, meta-analysis, and omics integration to identify potential biomarkers in cancer
- Presented research findings at national and international conferences

Bioinformatics Research Scientist, Genome Center, National Institute of Genetic Engineering and Biotechnology, 2011-2017
- Conducted bioinformatics analyses on large-scale genomics and transcriptomics datasets
- Designed and developed computational pipelines for data processing, quality control, and analysis
- Collaborated with cross-functional teams to identify actionable insights from genomic data
- Contributed to the development of bioinformatics tools and pipelines for data analysis
- Presented research findings to internal teams and external stakeholders

Research Assistant, University of Milan, Italy, 2010-2011
- Assisted in the analysis of genomic data and chromosome assembly for research project
- Conducted statistical analysis and data collection and visualization to interpret research results
- Assisted in the preparation of publications and research reports

Skills

- **Programming & Bioinformatics:** Expert in **Python, R, and Bash** for developing custom data analysis pipelines. Experienced with **TensorFlow** and **scikit-learn** for machine learning applications.

- **Genomic Data Analysis:** Skilled in analyzing diverse **high-throughput biological data**, including genomics, transcriptomics, and metagenomics. Extensive experience with **Next-Generation Sequencing (NGS)** data, including WGS, WES, RNA-seq, miRNA-seq, lncRNA-seq, and ATAC-seq at bulk and single-cell sequencing.

- **Advanced Analysis:** Expertise in **GWAS & post-GWAS analysis**, functional and comparative genomics, conservation analysis, and network analysis (PPI, co-expression).

- **Statistical & Computational Skills:** Proficient in **meta-analysis**, **statistical analysis**, and **database development**. Experienced in structural analysis, **molecular docking**, and **data visualization**.

- **Problem-Solving & Collaboration:** Excellent **problem-solving** and **critical thinking** abilities. Proven ability to work both independently and collaboratively in international and interdisciplinary research teams.

Project Experiences

- **Whole Genome Sequencing & Population Genomics:** Designed and executed large-scale whole-genome sequencing projects to characterize genetic diversity and population structure in human, plants, and bacteria

- **Gene Co-expression & Pathway Analysis:** Employed advanced comparative genomics and gene co-expression analysis to identify key regulatory modules and pathways linked to complex human diseases, revealing novel gene-disease associations.

- **Pan-genome & Meta Analysis:** Employed comparative genomics, meta and pan analysis to identify key signals across population/types.

- **Predictive AI Modeling in Humans:** Developed predictive AI models to identify and characterize genetic risk factors and biomarkers responsible for specific human health outcomes, with applications in personalized medicine and disease prognosis prediction.

- **Bioinformatics Pipeline & Database Development:** Developed robust and scalable Next-Generation Sequencing (NGS) analysis pipelines and custom databases to manage and query large-scale genomic datasets.

Selected Recent Publications

1. **Intratumoral IL-12 Immunotherapy Suppresses Tumor Growth and Metastasis Promoted by Tumor-Associated Mesenchymal Stem Cells in Triple-Negative Breast Cancer,** B Jahangiri, ZS Soheili, M Shamsara, V Shariati, A Zomorodipour, Cell Journal (Yakhteh), 2025
2. **Interaction between high-intensity interval training and high-protein diet on gut microbiota composition and body weight in obese male rats,** M Aliabadi, M Saghebjoo, B Yakhchali, V Shariati, Applied Physiology, Nutrition, and Metabolism, 2023
3. **Genomic palaeoparasitology traced the occurrence of *Taenia asiatica* in ancient Iran (Sassanid Empire, 2th cent. CE–6th cent. CE),** Z Askari, F Ruehli, A Bouwman, V Shariati, *et al.*, Scientific reports, 2022
4. **Transcriptional profile of ovine oocytes matured under lipopolysaccharide treatment in vitro,** M Rasekhi, A M-Sangcheshmeh, M Daliri, M Bakhtiarzadeh, V Shariati, *et al*., Theriogenology, 2020
5. **PrESOgenesis: A two-layer multi-label predictor for identifying fertility-related proteins using support vector machine and pseudo amino acid composition approach,** MR Bakhtiarizadeh, M Rahimi, V Shariati, Scientific reports, 2018
6. **Comprehensive genomic analysis *Pantoea agglomerans* strain P5,** V Shariati, MA Malboobi, Z Tabrizi, E Tavakol, Scientific reports, 2018
7. **A comprehensive transcriptomic meta-Analysis leveraging deep learning to uncover molecular signatures and potential therapeutic targets in Triple-Negative Breast Cancers**, S Salesi, T Adel, Z Nayeri, V Shariati, A Zomorodipour (Preprint)
8. **Decoding Gastric Cancer: An AI-Drive Transcriptomic Meta-Analysis**, A Asadi, T Adel, Z Nayeri, V Shariati (Preprint)
9. **Oleuropein's Effects on Breast Cancer Revealed by RNA-Sequencing and Machine Learning**, T Adel, Z Nayeri, B Jahangiri, S Salesi, V Shariati (Preprint)
10. **Towards a pan-cancer atlas of endoplasmic reticulum stress network**, Z Nayeri, V Shariati, M Rahmati, MA Moosavi (Preprint)

References:

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