

# Moses Stamboulia

700 N Woodlawn Ave, Bloomington, IN 47405

mossigstamboulia@gmail.com

812-327-1498

[linkedin](#), [Github](#), [Website](#)

## PROFILE

PhD candidate in Bioinformatics, working in a human microbiome lab under the supervision of Dr. Yuzhen Ye. Research focus is on studying the human gut microbiome, their effects on human health, using multi-omics data (meta-genomics, transcriptomic and proteomic). Protein Function annotation and evolution of protein functions.

## SKILLS

### Bioinformatics

Computational genomics, Comparative genomics, DNA/RNA Sequencing Analysis, differential gene expression, Cancer Genomics, Maker gene identifications, proteomics, peptide-sequence identification and quantification, Sequence Assembly, Sequence Alignment, Genome Annotation, gene and protein prediction, Variant Calling, Gene Annotation, Protein Functional Annotation, Computational genome binning, Microbiology

### Computer Science

Data Analytics, Data Visualization, Computational-Statistics, Exploratory Data Analysis (EDA), Data-Mining, Machine Learning.

### Tools

Python2/3, Matlab, Java, Bash, R, Shell Script, LaTeX, Command line, Linux, HPC Systems, Git/Version Control, APIs, Pandas, Numpy, Cytoscape, NetworkX, Jupyter Notebook, RMarkdown, Flair, scikit-learn, SciPy, Json, Biopython, Multi-Processing, Keras, TensorFlow, Pytorch

### Languages

English (Fluent), Armenian (Native) Arabic (Fluent).

## RESEARCH INTEREST

Bioinformatics, Microbiome, Meta-omics Integration, Next-Generation Sequencing (NGS), Proteomics, thermo fisher spectral data, Data-mining, Data Analysis, Personalized Medicine, computational Protein Function Annotation, Evolution of function, Human Health.

## EDUCATION

### Ph.D., Bioinformatics

2015 – Present | Indiana University, Bloomington, IN | Advisor: Dr. Yuzhen Ye

### M.S., Computer Science

2012 – 2015 | Lebanese American University Beirut, Lebanon | Advisor: Dr. Nashaat Mansour

### M.S., Bioinformatics

2013 – 2014 | Newcastle University, Newcastle upon Tyne, UK | Advisor: Dr. Philip Lord

### B.S., Computer Science

2008 – 2012 | Haigazian University, Beirut, Lebanon | Advisor: Dr. Hatem Halaoui

## RESEARCH EXPERIENCE

### Graduate Research Assistant, Indiana University at Bloomington

*Department of Informatics, Liddy School of Informatics, Computing and Engineering*

*August 2018 – Present*

- Working in a Human Microbiome Lab, under the supervision of Dr. Yuzhen Ye with a research area focused on enhancing our understanding on the human gut microbiome, functional analysis at the proteome level, profiling and studying the diversity of the gut bacteria across different human subjects, by integrating multi-omics data (meta-genomics, transcriptomics and proteomics).

*August 2015 – August 2018*

- Worked in a machine learning and computational genomics lab, under the supervision of Dr. Predrag Radivojac, with a research emphasis on comparative genomics, computational protein function prediction and evolution of function.

### Graduate Research Assistant, Lebanese American University

*Department of Computer Science and Mathematics*

*August 2014 – July 2015*

- Worked under the supervision of Dr. Nashaat Mansour, with a research focus on improving the accuracy of computational protein structure prediction using the Scatter Search metaheuristics

*August 2012 – July 2013*

- Worked under the supervision of Dr. Faisal Abu Khzam, with a research focus on improving the asymptotic run-time of the vertex cover algorithm.

## PROFESSIONAL EXPERIENCE

### Bioinformatics Scientist (summer intern), Guardant health, Redwood City California

*June 2020 – August 2020*

- Developed validation frameworks to assess and compare the performance of the Bioinformatics Pipelines
- Developed a quick and efficient tool for Sequence Alignment Map file comparisons

### Research Associate, Microbiome and Me LLC, Bloomington Indiana

*January 2020 – Present*

- Data analysis, visualization and summary statistics for the company.
- Company website development and maintenance.
- Implementation of customized pipelines for data analysis over multi-omics data (genomics, transcriptomics and proteomics).

### Junior Software Developer, Information Management LTD, Beirut, Lebanon

*April 2012 – November 2012*

- Developed and maintained applications for accounting, warehouse and point of sales

### Network Support Associate (summer intern) Vivacell MTS, Yerevan Armenia

*August 2011 – September 2011*

- Worked in a team that got dispatched to on-site network infrastructure, performed installation/maintenance and server side software maintenance and management.

## SELECTED PUBLICATIONS

**Stamboulia, M.,** Li, S., Ye, Y., (2020) Using high abundance proteins as guides for fast and effective peptide/protein identification from metaproteomic data (*Journal of microbiome*).

**Stamboulia, M.,** Guerrero, R., Hahn, M., Radivojac, P.,(2020) The Ortholog Conjecture Revisited: the value of Orthologs and Paralogs in Function Prediction (*Journal of Bioinformatics*).

**Stamboulia, M.,** Mansour, N. (2016) Scatter Search for Homology Modeling, (*International Conference on Swarm Intelligence*)