

FARAZ A. AHMED

(516)430-7252 fahmed@nyu.edu

RESEARCH EXPERIENCE

Bioinformatics Support Specialist, SUNY at Albany, New York, Sep, 2017 - Present

- Developing and maintaining custom pipelines tailored towards the analysis of differential gene expression (RNA-seq), DNA/RNA protein binding (CHIP/CHIRP-seq) and DNA/RNA methylation experiments in various animal models.
- Designing custom scripts on high performance computing clusters to allow for demultiplexing of sequencing samples generated on the Illumina platform.
- Integrating python based graphics libraries to allow for generation of interactive and intuitive quality control reports for clients.
- Providing consultation and collaboration on research grants funded through various agencies for adaptability of new tools and data analytics approaches for the next generation sequencing experiments.

Research Specialist, MediVis, Inc., New York, Nov, 2016 - Nov, 2017

- Participated in writing research grants and Internal Review Board (IRB) applications for research and development of mixed reality visualization applications for Microsoft HoloLens.

Research Intern (summer), Mount Sinai Ichan School of Medicine, New York, Jun, 2015 - Sep, 2015

- Developed protocols for image analysis, using ImageJ, CTAn and CellProfiler for Immunohistochemistry data, generated for understanding the acute and chronic effects of dynamic and static loading conditions on the Intervertebral Discs in a mouse model.

Research Assistant, New York University, New York, Jan, 2013 - May, 2015

- Developed experimental protocols for use of a microfluidics system in conjunction with open circuit potentiometry to detect a nucleotide addition during DNA sequencing.

ORGANIZATIONAL LEADERSHIP EXPERIENCE

Head Teaching Assistant, New York University, New York, May 2014 - May, 2016

- Lead a team of 4 Course Coordinators, 20 Teaching Assistants and Graduate Assistants and 15 Work-Study interns.

Work Study Intern Recruiting Manager, New York University, Dec 2013 - May 2014

- Interviewed new applicants for the Work-Study Practical Training Program in the Biomolecular Science Lab. Instructed and mentored these applicants to be appointed as future Teaching Assistants for the BMS Lab.

Coordinator Biomolecular Science Intro Courses, New York University, Dec 2013 - May 2014

- Developed new protocols for the students, revised lab preparatory guides, instructed and trained Teaching Assistants and maintained a running inventory of lab supplies.

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TEACHING EXPERIENCE

Adjunct Professor, New York University, New York, Sep 2016 - Present

- With this current role, I am providing students with an introductory level understanding of descriptive and inferential statistics, and its current use in the field of biology and scientific research. In addition to this I am also engaging students in various laboratory techniques pertaining to molecular biology. These techniques include but are not limited to PCR, DNA Fingerprinting, DNA Isolation and Gel Electrophoresis.

Teaching Assistant, New York University, New York, Aug 2012 - Dec 2012

- Prepared solutions and materials required by the students to perform academic experiments. Graded lab reports and quizzes. Mentored students to clarify additional concepts pertaining to the course.

SKILLS

In silico: Python, BASH, R/RStudio, SQL, GSEA, Trimmomatic, flexbar, FASTQC, STAR, multiQC, Picard tools, BedTools, HOMER suite, DESeq2, IGV, seqtk, rsem, cuffdiff suite, tcoffee, bcl2fastq, samtools, m6Aviewer, deeptools, htseq, minfi, watermelon, GATK, bowtie2, bwa, bioconda.

Wet Lab: Southern Blotting , Column and Affinity Chromatography , PCR , Agarose and SDS PAGE Electrophoresis , Vector Cloning, Bacterial-Cell Culturing , Blue - White Colony Screening , DNA Microarrays , Human DNA Fingerprinting , Ames Test, Western Blotting, DNA/RNA Isolation, Intervertebral Disc (IVD) Rodent Surgery & IVD Tissue Culture.

EDUCATION

M.S. Bioinformatics, Sep 2015 - May 2016

New York University, Tandon School of Engineering, GPA 3.78/4.00

B.S. Biomolecular Science, Sep 2011 - May 2015

New York University, Tandon School of Engineering, GPA 3.67/4.00

ABSTRACT PUBLICATIONS AND CONFERENCE PROCEEDINGS

1. Karsli Uzunbas G, **Ahmed F**, Sammons MA; Cell type-dependent control of p53 transcription and enhancer activity by p63. (under peer review)
2. **Ahmed F**, Usyk M, and Levon K; Bovine Serum Albumin (BSA) Binding on POLYANILINE (DNNSA) Coated Dropsens Electrodes.
3. **Ahmed F**, Usyk M, and Levon K; Potentiometric Measurements of DNA Sequencing, With POLYANILINE (DNNSA) Coated Dropsens Electrodes.

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4. Choudhry O, Morley C and **Ahmed F**; Utilization of Mixed-Reality Visualization for Evaluation of Cerebrovascular Lesions.
5. Choudhry O, Morley C, Kelly S and **Ahmed F**; Utilization of Mixed-Reality Visualization for Intracranial Tumors.
6. Morley C, Choudhry O, Kelly S, Phillips J and **Ahmed F**; Mixed Reality Visualization of Medical Imaging Data.
7. Tadros M, Palacio-Mancheno P, **Ahmed F**, Aly N, Purmessur D and Iatridis J; Injury-Related Changes to the IVD Phenotype are Associated with Aquaporin Expression, Independent of TRPV4, in the Inner Annulus Fibrosus.
8. Aly N, Palacio-Mancheno P, **Ahmed F**, Tadros M, Purmessur D and Iatridis J; Acute Exposure to Hyperosmolar Conditions Increased CK8 Activity Independent of TRPV4 Culture Model.

HONORS, SOCIETIES & ACTIVITIES

- NYU Honors Scholar Founders' Day Award, Spring 2016.
- NYU Dean's List Award Fall 2011, Spring 2011, Fall 2012, Fall 2013, Fall 2014, Spring 2015.
- U.S. Presidential Academic Award, Fall 2011.
- Math Honors Society, New York, Fall 2010 - Fall 2011.
- President; BMS Base Pairs Club NYU, Fall 2012 - Fall 2015
- Vice President; Biomedical Science Club NYU, Fall 2012 - Fall 2015
- Member BSMS Society NYU SoE, Fall 2014 - Present.

ACADEMIC PROJECTS

Biological Databases, New York University, Feb 2016 - May 2016

- Created a database using MySQL and R to integrate normalized expression values with gene annotations, including GO-Terms. Ex: Finding the average expression value for all genes with the GO-term 'binding' in each experiment.

Microarray Analysis, New York University, Sep 2015 - Dec 2015

- Developed a quality control pipeline in R for microarray data set (GSE1648) followed by the reporting and hypothesis generation for differentially expressed genes.

JBrowse Project, New York University, Sep 2014 - Dec 2014

- Configured a modern browsing environment capable of displaying NGS (date palm plant) datasets on a local workstation. This allowed exploration of gene models, the genome sequence, short reads from a resequenced genome and the RNA-seq reads from an early stage of development of date palm species.

REFERENCES

Available upon request.