

# Heba Saadeh, B.Sc, M.Sc, Ph.D.

Assistant Professor in Bioinformatics and Epigenetics, Computer Science Dep., KASIT, The University of Jordan  
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## Education

**2015-16 Associate Fellow of UK HEA “Higher Education Academy”**, Teaching Associate Programme, University of Cambridge, Cambridge, UK

**2010-14 Ph.D. in Bioinformatics**, King’s College London, London, UK

**2007-09: M.Sc., First class with honours degree in Computer Science/Bioinformatics**, GPA 4.00/4.00, University of Jordan, Amman, Jordan

**2003-07: B.Sc., First class with honours degree in Computer Science**, GPA 3.99/4.00, University of Jordan, Amman, Jordan

**2002-03: The General Secondary Education Certificate Examination**, Scientific Track, GPA 93.9/100, Sukaina Bint Al-Hussein Secondary School, Amman, Jordan

## Research Experience

**Sep.2016 – Present: Assistant Professor in Bioinformatics and Epigenetics**

Computer Science Dept. King Abdullah II School for Information Technology, The University of Jordan, Amman, Jordan.

**Nov. 2013-Aug. 2016: Postdoctoral Research Scientist/Research Associate in Bioinformatics and Epigenomics**

Epigenetics Programme, The Babraham Institute, Cambridge, United Kingdom  
Bioinformatics Group, The Babraham Institute, Cambridge, United Kingdom

**Oct. 2010 – Sep. 2013: Graduate Student in Bioinformatics (PhD Student)**

Department of Medical & Molecular Genetics, King’s College London, London, United Kingdom

**Thesis title:** *The role of DNA sequence signals in the epigenetic reprogramming of CpG islands during oogenesis and early embryogenesis.*

**Sep. 2007 – July. 2009: Graduate Student/Research Assistant (MSc. Student)**

Department of Computer Science, University of Jordan, Amman, Jordan

**Thesis title:** *Incorporating Experimental Conditions’ Knowledge into the Process of Estimating Missing Values in DNA Microarray Gene Expression Levels.*

## Teaching Experience

**Sep.2016 – Present: Assistant Professor in Bioinformatics and Epigenetics**, Computer Science Dept. King Abdullah II School for Information Technology, The University of Jordan, Amman, Jordan.

**Jan.2016–March.2016 “Lent Term”:** Tutor, The Homerton College, University of Cambridge, Algorithms course.

**Oct.2015–Dec.2015 / Oct.2014–Dec.2014 “Michaelmas Terms”:** Tutor, the Computer Laboratory, University of Cambridge, Bioinformatics course.

**Oct.2015–Dec.2015 / Oct.2014–Dec.2014 “Michaelmas Terms”:** Tutor, The Homerton College, University of Cambridge, Object Oriented Programming course.

**Sep. 2009 – Sep.2010: Lecturer and course coordinator**, Computer Science department, University of Jordan, Discrete Mathematics, C++, Advanced C++, Numerical Analysis courses.

**Sep. 2007 – Sep.2009: Teaching Assistant**, Computer Science department, University of Jordan

## Awards and Scholarships

**2012-13:** King's Continuation Scholarship (KCS), King's College London, UK

**2011:** KCL School of Medicine Travel Bursary, King's College London, UK

**2010-13:** KCL Graduate School Ph.D. Studentship, King's College London, UK

**2007-09:** JU M.Sc. Studentship for the first of the class students, University of Jordan, Jordan

**2007:** JU award for the first of the class student in computer science dep., University of Jordan, Jordan

**2004-05, 2005-06, 2006-07:** Ministry of Higher Education and Scientific Research Grant for the first of the class student in computer science dep. / University of Jordan, Jordan

## Research Interests and Skills

**Interests:** Develop and optimise algorithms and computational methods/tools related to machine learning and computational intelligence. I am also interested in challenging fundamental biological questions that need high computational skills to address.

### Skills:

- Computer science research; particularly: algorithms, machine learning, pattern recognition, computational intelligence and others.
- Genomics and Epigenetics, particularly: Chromatin remodeling and DNA methylation and its relationship with transcription, epigenetic reprogramming and histone modifications.
- Large scale biological data analysis and integration; Next generation sequencing (RNA-seq, ChIP-seq, RRBS-seq, BS-seq, PBAT) and Gene expression microarrays (Affymetrix, Illumina, Agilent).
- Good knowledge in bash, R, Perl, Java, C++ and Matlab.

## Selected Academic Representations

**Nov. 2015:** Poster at the 5<sup>th</sup> wellcome Trust Epigenomics of Common Diseases Conference "*Genome-wide DNA methylation analysis on isolated NPY- and POMC neurons from adult mouse hypothalamus*"

**Nov. 2014:** Talk at the Gurdon Institute Postdoc Symposium: Building an Organism Symposium (GIPA) "*Single-cell genome-wide bisulphite sequencing method for assessing the DNA methylation of rare cells and their methylation heterogeneity*"

**Oct. 2014:** Poster at the 4<sup>th</sup> wellcome Trust Epigenomics of Common Diseases Conference and at the 14<sup>th</sup> wellcome Trust Genome Informatics Conference (Sep.2014) "*Single-Cell Genome-Wide Bisulphite Sequencing Method for Assessing the DNA Methylation of Rare Cells and their Methylation Heterogeneity*"

**Nov. 2013:** Talk at the 3<sup>rd</sup> wellcome Trust Epigenomics of Common Diseases Conference "*The role of DNA sequence signals in the epigenetic reprogramming of CpG islands during oogenesis and early embryogenesis*"

**Nov. 2011-12-13:** Talks at the Genetics Society's 22<sup>nd</sup>/23<sup>rd</sup>/24<sup>th</sup> Mammalian Genetics and Development Workshop

**Sep. 2011:** Poster at the 1<sup>st</sup> wellcome Trust Epigenomics of Common Diseases Conference "*A Search for Imprinting-specific Sequence Motifs in Maternal Imprinting Control Regions*"

**July, 2011:** Talk at the Epigenesis Student/Postdoc Workshop, "*DNA sequence features involved in establishing and maintaining genomic imprinting in mouse oocytes*"

## Selected Training Courses / Workshops

**Feb. 2011 – Mar. 2011:** "Academic Writing", Academic Language Centre, KCL, London, UK

**Jan. 2012 – Mar. 2012:** "Structure of a Research Paper", Academic Language Centre, KCL, London, UK

**April. 2012 – May. 2012:** "Advanced Academic Vocabulary", Academic Language Centre, KCL, London, UK

**Oct. 2012:** "Quantitative data analysis", NHS-BRC training course, BRC, Guy's Hospital, London, UK

**Nov. 2012:** "Correlation and Linear Regression", NHS-BRC training course, BRC, Guy's Hospital, London, UK

**May 2013:** "Advanced Academic Grammar & Writing Practice", Academic Language Centre, KCL, London, UK

**Jan. 2014:** "Introduction to R", The Babraham Institute, Cambridge, UK

**Feb. 2014:** "Advanced R", The Babraham Institute, Cambridge, UK

**Mar. 2014:** "Creating Scientific Figures", The Babraham Institute, Cambridge, UK

**Mar. 2014:** "Methylation Data Analysis", The Babraham Institute, Cambridge, UK

**May 2014: “RNA-Seq Data Analysis”,** The Babraham Institute, Cambridge, UK

**Jun. 2014: “An Introduction to Solving Biological Problems with Python”,**University of Cambridge,Cambridge, UK

**Jun. 2014: “Introduction to Next Generation Sequencing”,** University of Cambridge, Cambridge, UK

**Jun. 2014: “An Introduction to Solving Biological Problems with R”,** University of Cambridge, Cambridge, UK

**May 2015: “Genome Annotation with Artemis”,** University of Cambridge, Cambridge, UK

**Jun. 2015: “Introduction to genome variation analysis using NGS”,** University of Cambridge, Cambridge, UK

I am a member of the London Epigenetics Club, Cambridge Epigenetics Club and Genetic Society.