Jordi A.

Jordi Abante

The Johns Hopkins University
Whitaker Biomedical Engineering Institute (CIS)
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RESEARCH INTERESTS: Statistical Inference, Machine Learning, Genetics, Epigenetics.

LANGUAGES: Catalan (native), Spanish (native), English (proficient), French (basic).

SKILLS: julia, python, R, bash, perl, C++, Matlab, LaTeX.

EDUCATION

The Johns Hopkins University
Baltimore, Maryland, U.S.
- Ph.D., Electrical and Computer Engineering — 8/2016 - 5/2021[1]
- M.S.E., Applied Mathematics and Statistics — 8/2016 - 12/2018
- Teaching Institute Certificate — 6/2020 - 3/2021

Texas A&M University
College Station, TX, U.S.
- M.S., Electrical and Computer Engineering — 8/2014 - 5/2016
- Business Management Certificate — 5/2015 - 6/2015

Polytechnic University of Catalonia
Barcelona, Catalonia, Spain
- B.S., Industrial Engineering — 9/2008 - 5/2014

RESEARCH EXPERIENCE

Research Assistant — 9/2016 - Present
Whitaker Biomedical Engineering Institute (CIS)
The Johns Hopkins University, Baltimore MD, U.S.
- Computational biology
- Genomics & epigenetics data modeling & analysis
- Statistical inference & machine learning

[1] Expected graduation.

Research Assistant 9/2014 - 1/2015, 6/2015 - 5/2016
Center for Bioinformatics and Genomic Systems Engineering
Texas A&M University, College Station, TX, U.S.
- Computational biology
- Genome & transcriptome data modeling & analysis
- Statistical inference & machine learning

Team Leader & Member 8/2012 - 8/2014
ETSEIB Motorsport Formula Student Team
Polytechnic University of Catalonia
Barcelona, Catalonia, Spain
- Power electronics R&D
- Electric vehicle R&D

PEER REVIEWED JOURNAL ARTICLES

M. Koldobskiy, G. Jenkinson, **J. Abante**, V.A. Rodriguez DiBlasi, W. Zhou, E. Pujadas, A. Idrizi, R. Tryggvadottir, C. Callahan, C. Bonifant, K. Rabin, P.A. Brown, H. Ji, J. Goutsias, and A.P. Feinberg.. "An information-theory analysis of DNA methylation identifies converging genetic and epigenetic drivers of paediatric acute lymphoblastic leukaemia". *Nature Biomedical Engineering* (in print).

J. Abante, Y. Fang, A.P. Feinberg, J. Goutsias. "Detection of haplotype-dependent allele-specific DNA methylation in WGBS data". *Nature Communications* 11, 5238 (2020). **Featured in Nature Communications Editors' Highlights**.

C. Qiu, H. Jin, I. Vvedenskaya, **J. Abante**, T. Zhao, I. Malik, S. Schwartz, P. Cui, P. Cabart, K. Hoo, R.P. Metz, C.D. Johnson, S. Sze, B.F. Pugh, B.E. Nickels, C.D. Kaplan. "Universal promoter scanning by Pol II during transcription initiation in Saccharomyces cerevisiae". *Genome Biology* (2020), 21:132.

M. Koldobskiy, **J. Abante**, G. Jenkinson, E. Pujadas, A. Tetens, F. Zhao, R. Tryggvadottir, A. Idrizi, A. Reinisch, R. Majeti, J. Goutsias, and A. P. Feinberg. "A Dysregulated DNA Methylation Landscape Linked to Gene Expression in MLL-Rearranged AML". *Epigenetics* (2020), 1-18.

M. P. Menden, D. Wang, M. J. Mason, B. Szalai, K. C. Bulusu, Y. Guan, J. Kang, M. Jeon, R. Wolfinger, T. Nguyen, M. Zaslavskiy, **J. Abante**, et al. "Community assessment to advance computational prediction of cancer drug combinations in a pharmacogenomic screen." *Nature Communications* 10, 2674 (2019).

G. Jenkinson, **J. Abante**, M. Koldobskiy, A. P. Feinberg, J. Goutsias. "Ranking genomic features using an information-theoretic measure of epigenetic discordance". *BMC Bioinformatics* (2019), 20:175.

G. Jenkinson, **J. Abante**, A. P. Feinberg, J. Goutsias. "An information-theoretic approach to the modeling and analysis of whole-genome bisulfite sequencing data". *BMC Bioinformatics* (2018), 19:87.

J. Abante, N. Ghaffari, C.D. Johnson, A. Datta. "HiMMe: using genetic patterns as a proxy for genome assembly reliability assessment." *BMC Genomics* (2017), 18:694.

PREPRINT

J. Abante, S. Kambhampati, A.P. Feinberg, J. Goutsias. "Estimating DNA methylation potential energy landscapes from nanopore sequencing data". *bioRxiv* (2021), 431480.

J. Abante, J. Goutsias. "CpelTdm.jl: a Julia package for targeted differential DNA methylation analysis". *bioRxiv* (2020), 343020.

C. Qiu, H. Jin, I. Vvedenskaya, **J. Abante**, T. Zhao, I. Malik, A.M. Visbisky, S.L. Schwartz, P. Cui, P. Čabart, K.H. Han, W.K.M. Lai, R.P. Metz, C.D. Johnson, S.H. Sze, B.F. Pugh, B.E. Nickels, C.D. Kaplan. "Promoter scanning during transcription initiation in Saccharomyces cerevisiae: Pol II in the "shooting gallery"". *bioRxiv* (2019), 810127.

N. Ghaffari, **J. Abante**, R. Singh, P. D. Blood, L. Pipes, C. Mason, C. D. Johnson. "What are the most influencing factors in reconstructing a reliable transcriptome assembly?". *bioRxiv* (2017), 220269.

PEER REVIEWED CONFERENCE PROCEEDINGS

P. Blood, N. Ghaffari, A. S. Seetharam, L. Pipes, R. Singh, **J. Abante**, A. Severin, C. D. Johnson, C. Mason. "Fast, flexible, and free: enabling large-scale genome assembly and analysis with the Bridges supercomputer". *In Plant and Animal Genome XXVI Conference*, San Diego, CA, U.S., 2018.

N. Ghaffari, **J. Abante**, R. Singh, P. D. Blood, C. D. Johnson. "Computational considerations in transcriptome assemblies and their evaluation, using high quality human RNA-Seq data". *XSEDE16: Extreme Science and Engineering Discovery Environment 2016 Conference*, Miami, FL, U.S., 2016.

CONFERENCES SEMINARS WORKSHOPS

J. Abante. "Statistical modeling and analysis of allele-specific DNA methylation at the haplotype level". *Electrical & Computer Engineering Departmental Seminars*, The Johns Hopkins University, Baltimore, MD, U.S., 2019.

J. Abante, N. Ghaffari, C.D. Johnson, A. Datta. "Using hidden Markov models to analyze next-generation sequencing data". *ENG-LIFE 2016: At the Interface of Engineering and Life Sciences*, College Station, TX, U.S., 2016.

INVITED TALKS

Salzman Lab @ Stanford University - Group Meeting	11/2020
Yosef Lab @ Berkeley University - Group Meeting	11/2020
Gerstein Lab @ Yale University - Group Meeting	11/2020
Knowles Lab @ Columbia University - Group Meeting	10/2020
Marks Lab @ Harvard University - Group Meeting	10/2020

TEACHING & MENTORING

Undergraduate Student Mentor Fall 2020
Whiting School of Engineering
The Johns Hopkins University, Baltimore, MD, U.S.
- Mentored Sandeep Kambhampati, senior in Biomedical Engineering
- Johns Hopkins University PURA grant awarded to Sandeep

Course Assistant & Guest Lecturer Fall 2018, 2019, 2020
EN.520.622. Principles of Complex Networked Systems
Whiting School of Engineering
The Johns Hopkins University, Baltimore, MD, U.S.
- Guest lecturer (Fall 2020)
- Graded assignments and exams
- Provided students with one-on-one tutoring and out of class assistance

Teaching Assistant & Guest Lecturer Spring 2015
ENGR-112 Foundations of Engineering II
Dwight Look College of Engineering
Texas A&M University, College Station, TX, U.S.
- Guest lecturer
- Responsible of grading by managing a team of grading assistants
- Provided students with one-on-one tutoring and out of class assistance

FELLOWSHIPS

"la Caixa" Fellowship 8/2016 - 8/2017
"la Caixa" Foundation, Barcelona, Catalonia, Spain
- One of 50 students selected across Spain for competitive merit scholarship
- Covered tuition fees plus monthly allowance for a 2-year period
- Total monetary value of fellowship was $250,000

INDUSTRY EXPERIENCE

R&D Engineer 5/2016 - 8/2016
Sensory Value
Sant Cugat del Vallès, Catalonia, Spain
- Machine learning applied to market research

R&D Engineer 3/2013 - 5/2014
Cinergia, Control Intel·ligent de l'Energia
Barcelona, Catalonia, Spain
- Power electronics R&D for EV applications

AWARDS & HONORS

Best Thesis Award 5/2015
Polytechnic University of Catalonia Barcelona, Catalonia, Spain

Golden Key Honor Society 5/2016
Texas A&M University, College Station, Texas, U.S.

Phi Kappa Phi 4/2016
Texas A&M University, College Station, Texas, U.S.

IEEE-Eta Kappa Nu Honor Society 1/2016
Texas A&M University, College Station, Texas, U.S.

UNIVERSITY SERVICE

ECE Department Head Search Spring 2021
Johns Hopkins University
Baltimore, Maryland, U.S.
- Participated in the interview process of 8 candidates
- Participated in discussions after each interview
- Provided feedback after each interview to search firm

COMMUNITY SERVICE

Voluntariat per la llengua 2020
Baltimore, Maryland, U.S.
- Program by the Department of Culture, Catalan Government
- Language partner for people interested in learning Catalan

Our Daily Bread Volunteer 2020
Baltimore, Maryland, U.S.
- Cooked food for families in need during COVID 19 pandemic

Barclay Hopkins STEM Partnership 2017
The Johns Hopkins University, Baltimore, Maryland, U.S.
- Worked with elementary school students to engage them in STEM
- Assembled light-tracking robots for student activities

The Big Event 2015-2016
Texas A&M University, College Station, Texas, U.S.
- Provided yard work and window washing for elderly residents

Grup de voluntariat ANTAR 2006-2008
Àgora International School, Sant Cugat del Vallès, Catalonia, Spain
- Organized fundraising activities and food drives for people in need
- Distributed and served food in several soup kitchens in Barcelona

PEER REVIEWER

IEEE Access

REFERENCES

Available upon request.