

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 - 5/2021¹
- M.S.E., Applied Mathematics and Statistics 8/2016 - 12/2018
- Teaching Institute Certificate 6/2020 - 6/2020

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

¹Expected 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

TEACHING &
MENTORING

Undergraduate Student Mentor Fall 2020

Whiting School of Engineering

The Johns Hopkins University, Baltimore, MD, U.S.

- Mentored S. K., senior in Biomedical Engineering
- Counseled S. K. in computational genomics research project
- Counseled S. K. in undergraduate research grant proposal (PURA)
- Johns Hopkins University PURA grant awarded to S. K.
- Counseled S. K. in graduate programs (application, procedures & funding)

Course Assistant & Guest Lecturer Spring 2015

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

PEER
REVIEWED
JOURNAL
ARTICLES

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.

UNDER
REVIEW

M. Koldobskiy, G. Jenkinson, **J. Abante**, V. A. Rodriguez DiBlasi, W. Zhou, E. Pujadas, R. Tryggvadottir, C. Callahan, A. Idrizi, P. A. Brown, H. Ji, J. Goutsias, and A. P. Feinberg. “Epigenetic Potential Energy Landscapes Reveal Drivers of Childhood Leukemia”. *Nature Biomedical Engineering* (under review, revised).

PREPRINT	J. Abante , J. Goutsias. “CpelTdm.jl: a Julia package for targeted differential DNA methylation analysis”. <i>bioRxiv</i> (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 <i>Saccharomyces cerevisiae</i> : Pol II in the “shooting gallery””. <i>bioRxiv</i> (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?”. <i>bioRxiv</i> (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”. <i>In Plant and Animal Genome XXVI Conference</i> , 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”. <i>XSEDE16: Extreme Science and Engineering Discovery Environment 2016 Conference</i> , Miami, FL, U.S., 2016.
CONFERENCES SEMINARS WORKSHOPS	J. Abante . “Statistical modeling and analysis of allele-specific DNA methylation at the haplotype level”. <i>Electrical & Computer Engineering Departmental Seminars</i> , 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”. <i>ENG-LIFE 2016: At the Interface of Engineering and Life Sciences</i> , College Station, TX, U.S., 2016.
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 Cinergia, Control Intel·ligent de l'Energia Barcelona, Catalonia, Spain <ul style="list-style-type: none"> • Power electronics R&D for EV applications 	3/2013 - 5/2014
FELLOWSHIPS	“la Caixa” Fellowship “la Caixa” Foundation, Barcelona, Catalonia, Spain <ul style="list-style-type: none"> • 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 	8/2016 - 8/2017
AWARDS & HONORS	Best Thesis Award Polytechnic University of Catalonia Barcelona, Catalonia, Spain	5/2015
	Golden Key Honor Society Texas A&M University, College Station, Texas, U.S.	5/2016
	Phi Kappa Phi Texas A&M University, College Station, Texas, U.S.	4/2016
	IEEE-Eta Kappa Nu Honor Society Texas A&M University, College Station, Texas, U.S.	1/2016
COMMUNITY SERVICE	Voluntariat per la llengua Baltimore, Maryland, U.S. <ul style="list-style-type: none"> • Program by the Department of Culture, Catalan Government • Language partner for people interested in learning Catalan 	2020
	Our Daily Bread Volunteer Baltimore, Maryland, U.S. <ul style="list-style-type: none"> • Cooked food for families in need during COVID 19 pandemic 	2020
	Barclay Hopkins STEM Partnership The Johns Hopkins University, Baltimore, Maryland, U.S. <ul style="list-style-type: none"> • Worked with elementary school students to engage them in STEM • Assembled light-tracking robots for student activities 	2017

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

IEEE Access

REVIEWER

REFERENCES

Available upon request.