

# Jordi Abante

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The Johns Hopkins University

Whitaker Biomedical Engineering Institute (CIS)

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RESEARCH INTERESTS      Statistical Inference, Machine Learning, Computational Biology, Epigenetics.

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

SKILLS      julia, python, R, bash, perl, C++, Matlab, L<sup>A</sup>T<sub>E</sub>X.

## EDUCATION      **The Johns Hopkins University**

Baltimore, Maryland, U.S.

- Ph.D., Electrical and Computer Engineering      8/2016 - 5/2021<sup>1</sup>
- 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

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<sup>1</sup>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

TEACHING &  
MENTORING

**Graduate Mentor** Fall 2020

Whiting School of Engineering

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

- Counseled undergraduate student on a research project
- Counseled undergraduate student on graduate programs, application procedures and 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

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).

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).

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.

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| PREPRINT                                      | C. Qiu, H. Jin, I. Vvedenskaya, <u>J. Abante</u> , 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, <u>J. Abante</u> , 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<br>REVIEWED<br>CONFERENCE<br>PROCEEDINGS | P. Blood, N. Ghaffari, A. S. Seetharam, L. Pipes, R. Singh, <u>J. Abante</u> , 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, <u>J. Abante</u> , 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<br>SEMINARS<br>WORKSHOPS          | <u>J. Abante</u> . “Statistical modeling and analysis of allele-specific DNA methylation at the haplotype level”. <i>Electrical &amp; Computer Engineering Departmental Seminars</i> , The Johns Hopkins University, Baltimore, MD, U.S., 2019.   |                 |
|   | <u>J. Abante</u> , 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<br>EXPERIENCE                        | <b>R&amp;D Engineer</b><br>Sensory Value<br>Sant Cugat del Vallès, Catalonia, Spain<br>• Machine learning applied to market research  | 5/2016 - 8/2016 |
|   | <b>R&amp;D Engineer</b><br>Cinergia, Control Intel·ligent de l'Energia<br>Barcelona, Catalonia, Spain<br>• Power electronics R&D for EV applications  | 3/2013 - 5/2014 |

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| FELLOWSHIPS       | <b>“la Caixa” Fellowship</b> 8/2016 - 8/2017<br>“la Caixa” Foundation, Barcelona, Catalonia, Spain <ul style="list-style-type: none"> <li>• One of 50 students selected across Spain for competitive merit scholarship</li> <li>• Covered tuition fees plus monthly allowance for a 2-year period</li> <li>• Total monetary value of fellowship was \$250,000</li> </ul>   |
| COMMUNITY SERVICE | <b>Our Daily Bread Volunteer</b> 2020<br>Baltimore, Maryland, U.S. <ul style="list-style-type: none"> <li>• Baked casseroles for families in need during COVID 19 pandemic</li> </ul><br><b>Barclay Hopkins STEM Partnership</b> 2017<br>The Johns Hopkins University, Baltimore, Maryland, U.S. <ul style="list-style-type: none"> <li>• Worked with elementary school students to engage them in STEM</li> <li>• Assembled light-tracking robots for student activities</li> </ul><br><b>The Big Event</b> 2015-2016<br>Texas A&M University, College Station, Texas, U.S. <ul style="list-style-type: none"> <li>• Provided yard work and window washing for elderly residents</li> </ul><br><b>Grup de voluntariat ANTAR</b> 2006-2008<br>Àgora International School, Sant Cugat del Vallès, Catalonia, Spain <ul style="list-style-type: none"> <li>• Organized fundraising activities and food drives for people in need</li> <li>• Distributed and served food in several soup kitchens in Barcelona</li> </ul> |
| AWARDS & HONORS   | <b>Best Thesis Award</b> 5/2015<br>Polytechnic University of Catalonia Barcelona, Catalonia, Spain<br><b>Golden Key Honor Society</b> 5/2016<br>Texas A&M University, College Station, Texas, U.S.<br><b>Phi Kappa Phi</b> 4/2016<br>Texas A&M University, College Station, Texas, U.S.<br><b>IEEE-Eta Kappa Nu Honor Society</b> 1/2016<br>Texas A&M University, College Station, Texas, U.S.   |
| PEER REVIEWER     | IEEE Access  |
| REFERENCES        | Available upon request.  |