Alberto Gil-de-la-Fuente

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GitHub
Ceu Mass Mediator

Research, education, code

Profile

Alberto Gil de la Fuente was born in Madrid in 1990. He studied Computer Engineering in San Pablo-CEU Universities. He graduated in 2013 obtaining the award to the best academic record. In 2016 he finished his MsC in Computer Engineering in Complutense University, in Madrid. During the MsC he did a period abroad of 6 months in Linköping University, Sweden. I started my PhD in Life and Science Technologies in San Pablo-CEU University in 2015. The project consists in an on-line tool to help with the metabolite identification. I also did a researching stay in the University of Alberta (Wishart Lab) for 6 months during 2018. You can see the results of the PhD development in the web page listed in the header. During his studies, Alberto combined both work and education. He worked as a database administrator in one of the biggest Spanish IT companies (Informatica El Corte Ingles: IECISA). He obtained some of the certifications from Oracle, DB2, MySQL or MongoDB, some of the main database technologies used nowadays. He is currently finishing the project and looking forward to continuing the research in the Metabolomics field, which he believes that it will bring the most significant advances in the systems biology field. At the same time, he recently started to enjoy the synergies of teaching. He thinks that the education is key in the formation of independent and autonomous people.
Particularly, he really enjoys High-Performance Computing. We should help the computers to make their work, and he has developed some projects to apply the High-Performance computing to life sciences.
Personally, he likes to create products that help people. He enjoys his free time doing sports, socializing with the family and friends and learning new technologies for a subsequent application solving real problems. he regularly does sports, he is part of the futsal team of the CEU-San Pablo University, and he actively participates in different event races, both running or biking. During his university studies he was football trainer of U-12 and U-15 teams, leading the players to become adults and having a lot of fun :)

Scientific Publications

Under Review. LAS: A Lipid Annotation Service Capable of Explaining the Annotations it Generates — *Under Review*
Fernández-López, M., Gil-de-la-Fuente, A., Godzien, J., Rupérez, F.J., Barbas, C. and Otero, A.
Computational and Structural Biotechnology Journal. Impact Factor: 4.720 (Q1)

BioTransformer: a comprehensive computational tool for small molecule metabolism prediction and metabolite identification — *2019*
Djoumbou-Feunang, Y., Fiamoncini, J., Gil-de-la-Fuente, A., Greiner, R., Manach, C. and Wishart, D.S.
Journal of cheminformatics. Impact Factor: 3.893 (Q1)

CEU Mass Mediator 3.0: a metabolite annotation tool — *2018*
Gil-de-la-Fuente, A., Godzien, J., Saugar, S., Garcia-Carmona, R., Badran, H., Wishart, D.S., Barbas, C. and Otero, A.
Journal of proteome research. Impact Factor: 3.950 (Q1)

Characterization and annotation of oxidized glycerophosphocholines for non-targeted metabolomics with LC-QTOF-MS data — *2019*
Gil-de-la-Fuente, A., Traldi, F., Siroka, J., Kretowski, A, Ciborowski, M., Otero, A., Barbas, C. and Godzien, J.
Analytica Chimica Acta. Impact Factor: 5.123 (Q1) Under review

Knowledge-based metabolite annotation tool: CEU Mass Mediator — *2018*
Gil-de-la-Fuente, A., Godzien, J., Fernández-López, M., Rupérez, F.J., Barbas, C. and Otero, A.
Journal of Pharmaceutical and Biomedical Analysis Impact Factor: 2.831 (Q1)

Differentiating signals to make biological sense - a guide through databases for MS-based non-targeted metabolomics — *2017*
Gil-de-la-Fuente, A., Armitage, E.G., Otero, A. Barbas, C. and Godzien, J.
Electrophoresis. Impact Factor: 2.744 (Q2)

GPU-based Acceleration of ECG Characterization using High-Order Hermite Polynomials — *2016*
Gil-de-la-Fuente, A., Márquez, D.G., Caffarena, G., Iriarte, A. and Otero, A.
Current Bioinformatics. Impact Factor: 0.770 (Q4)

Book Chapters

Processing Metabolomics and Proteomics Data with Open Software. Chapter 11: Metabolite annotation with CEU Mass Mediator — *Under review*
Gil-de-la-Fuente, Godzien, J., A., Otero and A. Barbas, C.
Royal Society of Chemistry. Under review

Processing Metabolomics and Proteomics Data with Open Software. Chapter 12: Metabolite annotation using in-silico generated compounds: MINE and BioTransformer — *Under review*
Gil-de-la-Fuente, A., Godzien, J., Otero and A. Barbas, C.
Royal Society of Chemistry. Under review

Processing Metabolomics and Proteomics Data with Open Software. Chapter 3: Metabolomics — *Under review*
Wishart D.S., Godzien, J., Gil-de-la-Fuente, A., Otero and A. Barbas, C.
Royal Society of Chemistry. Under review

Data Analysis for Omic Sciences: Methods and Applications. Chapter 15: Metabolite Annotation and Identification — *2018*
Godzien, J., Gil-de-la-Fuente, A., Otero, A. and Barbas, C.
Elsevier. ISBN: 978-0-444-64044-4

International Conferences

BioTransformer: a comprehensive computational tool for small molecule metabolism prediction and metabolite identification — 2018
Djoumbou-Feunang, Y., Fiamoncini, J., Gil-de-la-Fuente, A., Greiner, R., Manach, C. and Wishart D.S.
The Second Annual Canadian Metabolomics Conference, Canmore

A fast and reliable spectral quality assessment in metabolomics studies — 2018
Gil de la Fuente, A., Traldi, F., Kowalczyk, T., Ciborowski, M., Otero, A., Barbas, C. and Godzien, J.
14th Annual Conference of the Metabolomics Society

CMM workshop: Improving Metabolit ID Approaches — Confidence and CASMI — 2018
S., Sumner, L.W., Gil de la Fuente, A., Godzien, J. and Barbas, C.
14th Annual Conference of the Metabolomics Society

Ceu Mass Mediator: a knowledge-based tool for metabolite annotation — 2017
Gil de la Fuente, A., Godzien, J., Barbas, C. and Otero, A.
28th Pharmaceutical and Biomedical Analysis Conference

Low-power, Low-Latency Hermite Polynomial Characterization of Heartbeats Using a Field-Programmable Gate Array — 2016
Lakhotia, K., Caffarena, G., Gil-de-la-Fuente, A. Márquez, D.G., Otero, A. and Desai, M.P.
International Conference on Bioinformatics and Biomedical Engineering

Polynomial Characterization of Heartbeats with Graphics Processing Units — 2014
Gil-de-la-Fuente, A., Caffarena, G., Marquez, D.G. and Otero, A.
International Conference on Bioinformatics and Biomedical Engineering

Official Education

San Pablo-CEU University — 2015-current
PhD in Life Sciences and Technologies.

University of Alberta — 2018
Researching period in Wishart Lab.

Linköping University — 2015-2016
Erasmus scholarship.

Complutense University — 2014-2016
MsC in computer Engineering. GPA 8.69/10.

Alfonso X el Sabio University — 2013-2014
Degree in Information Systems Engineering (Grado en Ingeniería de Sistemas de Información). GPA 8.81/10.

San Pablo-CEU University — 2009-2012
Computer engineering (Ingeniería Informática de Sistemas). GPA 8.68/10.

Honors

Santander Scholarships — 2018
Scholarship to help the mobility of researchers. Funding to do a period abroad in the University of Alberta

San Pablo-CEU university — 2015
FPI scholarship for PhD studies

Spanish ministry of Education and Science — 2015
Erasmus Scholarship

Alfonso X el Sabio University — 2014
Distinction in grade Thesis called "Heartbeats clustering using GPUs"

San Pablo-CEU University — 2013
Best Academic Record of the year

San Pablo-CEU University — 2013
Distinction in grade Thesis called "Characterization of heartbeats by Hermite Polynomials using GPUs"

Comunidad de Madrid — 2011
Excellent Academic Performance.
Award for students with a GPA higher than 9.25 during an academic year

Career

PhD Student — 2015-current
San Pablo-CEU University
Development a software tool called Ceu Mass Mediator The title of the thesis project is design, validation and implementation of a software tool for metabolite identification. New strategies to aid the researchers during the metabolite annotation and identification have been developed. The development of these thesis has been published in JCR Q1 journals (see publications) and international conferences (see conferences). The framework is relatively used by the metabolomics community, having users in different countries like USA, Canada, China, Australia, Spain, France or Poland, among others.

Research Assistant
2018

University of Alberta

Scholarship to integrate new knowledge into the expert system developed during the thesis in CEU-San Pablo University. I joined a new international environment and I obtained experimental knowledge that could be subsequently applied for the metabolites annotation and identifcation. I supported the younger researchers regarding the IT architecture and the technological issues occurred.

Database Administrator
2009-2015

Informatica El Corte Ingles (IECISA)

The job in IECISA was my first experience related with IT. I started at the same time than the university since the first year. I was system administrator for different database engines such as Oracle, IBM DB2, MySQL, MongoDB or IBM InfoSphere Change Data Capture, among others. High performance architectures were installed and maintained by me (Oracle RAC 10g and 11g) as well as high availability architectures (Oracle DataGuard). We used both Oracle RDBMS and Oracle ASM. I was in charge of providing backup and recovery databases in case of disasters using Recovery Manager.

Official Courses

Agilent Technologies
2016

MS multiplatform Metabolomics Workshop

Oracle
2015

Oracle Database 12c: New features for Administrators

IESE Business School
2014

Leadership and Management Program

NVIDIA
2014

CUDA and OpenAcc

Oracle
2013

MySQL for Database Administrators Ed 3.1

NVIDIA
2013

CUDA and OpenACC

IBM
2012

DB2 IBM BootCamp. DB210

Universidad a Distancia Española (UNED)
2010

Web programming using PHP, JavaScript and HTML

Universidad a Distancia Española (UNED)
2010

.net programming

Universidad a Distancia Española (UNED)
2009

Server Administration

Universidad a Distancia Española (UNED)
2009

Java programming

Certifications

Oracle Database 11g Administrator Certified Professional
2015

SQL administration II (1Z0-053)

Oracle Database 11g Administrator Certified Associate
2015

SQL Fundamentals, Administration I (1Z0-051 - 1Z0-052)

Oracle MySQL Certified Professional. 1Z0-873 - 1Z0-874
2013

MySQL 5 Database Administrator part I, II (1Z0-873 - 1Z0-874)

Information Management DB2 10 Technichal Proffesional v3
2013

IBM 000-610

Certified Database Associate — DB2 10.1 Fundamentals
2013

IBM 000-N18

Skills

Adaptability
Multi-task
Teaching
CUDA
Java
C,C++
PrimeFaces
AWS
HTML
SQL
PL/SQL
ORM
LaTeX