André C. Guerra

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Expertise

Back-end Development

The back end of a software usually consists on multiple servers, an applications, and databases. A back-end developer builds and maintains the stack technology that powers those components and their intercommunication. I've extensive understanding on server-side languages and frameworks and have build several versioned, production-ready APIs with different bussiness logic associated.

Data Science and Analysis

From data to knowledge. In order to achieve such goal data must be processed, modelled and the produced results must be properly interpreted and displayed. I've considerable knowledge on big data processing frameworks along with modern modelling techniques based on multivariate data analysis, machine learning and artificial intelligence.

Software Engineering

Design, build, test and repeat. A software engineer main responsibility is the iterative management of software development in order to meet clients or business logic requirements. I've experience working in diversified teams of software engineers and developers under agile development environments and versioned production deployments.

Biotechnology

Biotechnology is the use living biological systems to yield products. Along with the technology and products, huge amounts of data are typically produced. Also, biotechnology is without a doubt the field with most diversity of data, from DNA to protein, from cell to process... I've dedicated most of my graduate studies developing models and processing data for biopharmaceutical and biotechnology.

Experience

2019 - Present

COMPUTATIONAL BIOLOGIST

Alchemy Project - Amyris
UCP, Porto, Portugal

2015 - 2018

EARLY STAGE RESEARCHER

Marie Curie Scholarship, ITN Biorapid, Rapid Bioprocess Development
Newcastle University, Newcastle upon Tyne, United KIngdom

2012 - 2013

RESEARCH TRAINING COURSE D

Instituto de Tecnologia Química e Biológica
Oeiras, Portugal

Skills

DATA ACQUISITION

Streams IO, OPC UA, R Dataframes, Pandas, Numpy, among others...
Including conventional off-line data importation, such as tabular files...

DATA PROCESSING

ELKI, PlsToolbox, Weka, Dplyr, KNIME...
Proefficiency on data pre and post processing using conventional packages and built-in pipelines...

PROCESS MODELLING

Matlab(ODEs), FEniCS(PDEs), COBRA Toolbox, Keras/Tensorflow, Caret, Statsmodels
Proefficiency on data modelling with major focus on statistical machine-learning model applications...

VISUALIZATION

Matplotlib, Bokeh, Plotly, D3

Visualizations on WebGL ready platforms...

PROGRAMMING

Matlab, Java, Javascript, R, Python, SQL, Html
Including platforms such as Spring, JavaFX, Django, Node, Vuejs, amoung others...

DEPLOYMENT AND VERSIONING

Digital Ocean, Heroku, Subversion, Git, Bitbucket
Willing to learn Amazon Lambdas

DATABASES

MySQL, PostgreSQL, Oracle, MongoDB, Redis, Cassandra, InfluxDB, among others...
Understanding and deployment of the most common SQL, NO-SQL and some OLAP databases

TESTING

JUnit, Moca, Karma, Tox
Willing to learn Cumcumber and Robot Framework

Publications

MACHINE LEARNING IN BIOPHARMACEUTICAL MANUFACTURING

TOWARD BIOTHERAPEUTIC PRODUCT REAL-TIME QUALITY MONITORING

Education

2015 - 2018

EARLY STAGE RESEARCHER - PHD STUDENT IN CHEMICAL ENGINEERING

School of Engineering, Newcastle University

Newcastle upon Tyne, United Kingdom

Exploiting integrated rapid bioprocess monitoring methods for acceleration of process development

Integrate the analytical and modelling methods developed in all WPs into a framework for accelerated process development. Methods to build process model toolbox need to address knowledge diversity in addition to specifying process model structure and capability and the means by which the process model is parameterised. Among the important innovations is the ability of such models to incorporate a quantification of belief that can be utilised to determine the risk. Bayesian strategies offer both this capability and the opportunity to refine the representation as knowledge is accumulated. Another representational challenge is the ability to capture the behaviour of a whole process rather than individual unit operations. The difficulty involves the capture of unit to unit interactions and the representational requirements of other units to build a whole process description. Here agent based strategies offer great potential. Foremost among all the representational problems faced is the need to specify structure. Hybrid relationships offer a means of using mechanistic knowledge but other approaches can be used to capture structure, evolutionary computational approaches offer a practical alternative.This project will review the most appropriate methodology for general monitoring framework in bioprocessing and develop the overall rapid bioprocess development framework integrating all the model representations from the remaining BioRapid projects.

2014 - 2015

MASTER DEGREE IN BIOTECHNOLOGY

Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa
Caparica, Portugal

Genome-scale metabolic network reconstruction of Polaromonas JS666 strain for analyzing cDCE degradation rates and bioremediation improvement

Several bioinformatic tools were used in order to reconstruct the metabolic network from the partially annotated genome of Polaromonas sp. JS666, a microrganism capable of using cDCE as the sole carbon and energy source. After this initial curation, the model shall be correlated with published bibliographyc data using Flux Balance Analysis. Hence the final model, iJS666, will be able to predict the optimum extracellular metabolites concentrations such that cDCE degradation rates would be maximized.

2009 - 2013

BACHELOR DEGREE IN CELLULAR AND MOLECULAR BIOLOGY

Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa

Caparica, Portugal

Awards

2015

BEST STUDENT

Master in Biotecnology
Faculdade Ciencias e Tecnologia, Universidade Nova de Lisboa

Interests

BOOKS

I'm a huge fan of sci-fi and distopian books. All time favorite: Dune.

SPORTS

Sports are really not my expertise however I'm a passionate football and MotoGP fan.

OTHERS

Herpetology and Aquariofilia.

MISCELLANEOUS

European Driver's Licence (2013), Type A1, A & B1.

Contact

First Name

a

Last Name

Guerra

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Subject

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Message

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