

JOÃO RIBEIRO PINTO

Biomedical Engineering MSc

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I have recently finished my master in Bioengineering, that gave me wide perspectives, knowledge and capabilities on science and technology, especially for medical applications. I am mainly fond of pattern recognition, signal and image analysis, and I love the way they open possibilities in every scientific field. Thrilled to innovate and solve challenging problems, I pursued a path towards research, working on biometrics with various traits, and also on image and signal analysis for medical diagnosis. I am looking to continue tackling current problems in new and exciting fields.

PROGRAMMING

Most used:

 **Python**
 **MATLAB**
 **SQL**
 **HTML**
 **CSS**
 **PHP**

Basic knowledge:

 **C/C++**
 **Java**
 **JavaScript**
 **LabVIEW**

Briefly explored:

 **R**
 **C#**
 **.NET**
 **jQuery**
 **Bootstrap**
 **React.js**
 **Angular.js**
 **Sass**

OTHER SKILLS

Languages:

Portuguese: native // English: fluent

Software validation & testing //
Entrepreneurship // Marketing //
Graphic design

EDUCATION

Master in Bioengineering

Branch of Biomedical Engineering

Faculdade de Engenharia, Universidade do Porto (FEUP)

License degree completed in 2015 // Master degree completed in 2017.

RECENT ACTIVITY & EXPERIENCE

MSc Research Fellow at FEUP (since 08/2017)

Research on biometrics and drowsiness detection, with ECG, in automobiles.

Master Thesis Trainee at CardioID Tech. (09/2016 - 07/2017)

Research on signal processing and machine learning approaches for biometric recognition, using ECG signals acquired from drivers, on the steering wheel.

Vice-Chair at EMBS UP (11/2015 - 07/2017)

Organisation and supervision of activities, projects, and workshops related to engineering in medicine and biology, liaison with the local IEEE student branch, and promotion of IEEE and EMBS to academic and professional communities.

Student Researcher at VILab (09/2015 - 04/2016)

Team research on machine learning applications, mainly on biometrics.

MAIN FIELDS OF INTEREST



Computer
Vision



Signal
Processing



Machine
Learning



Mobile apps
& UI design



Web &
Databases



Sensors &
Electronics

MAIN PROJECTS

SPHERE challenge: Multisensor Activity Recognition

Activity and location recognition of subjects on a house, using accelerometers, 3D video, and motion detectors. Required dealing with missing and noisy data. Ranked 63rd among 579 teams. Tools: Matlab (kNN, SVM, AdaBoost).

Urinary bladder CAD system for 3D reconstruction

Development and evaluation of an algorithm for urinary bladder segmentation in contrastless CT images of patients suffering from bladder wall tumours. Work published in an international peer-reviewed journal.

Bone texture for diagnosis of osteoporosis

Extraction of femur radiograph texture features for detection of osteoporosis. Tools: Matlab (Naïve Bayes, Parzen, kNN, SVM).

WAD: Web Aided Diagnosis

Simple image analysis and diagnosis embedded in a website to aid clinicians. Tools: PHP, HTML, CSS, SQL, JavaScript.

Personalised medicine: Gene mutation classification

Recognising mutations with categorical data on thousands of genes & variations. Tools: Python - pandas, sklearn, bokeh (Random Forests, GBM, ANN, Naïve Bayes).

PUBLICATIONS

Towards a Continuous Biometric System Based on ECG Signals Acquired on the Steering Wheel

in *Sensors* 17(10) (09/2017)

by JR Pinto, JS Cardoso, A Lourenço, and C Carreiras. doi: 10.3390/s17102228.

A versatile method for bladder segmentation in computed tomography two-dimensional images under adverse conditions

in *Proc IMechE Part H: J Engineering in Medicine* 231(9) (06/2017)

by JR Pinto and JMRS Tavares. doi: 10.1177/0954411917714294.