



**CONFAP**  
Conselho Nacional das Fundações  
Estaduais de Amparo à Pesquisa



**British Academy and CONFAP's Newton Fund Workshop**  
**10-12 March 2020, Brasília, DF, Brazil**

## Big Data Linkage & Analytics

**Dr. Marcos E. Barreto**



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Associate Researcher



Newton International Fellow Alumnus  
(University College London, 2016-2018)



Salvador, BA



[www.atyimolab.ufba.br](http://www.atyimolab.ufba.br)

- ✓ Cloud Robotics
- ✓ High-performance Computing
- ✓ Data Science applied to Health and Biomedicine

## Funding



## Research & Grants

**Scaling up multimodal data fusion and analytical models over multiple-GPU systems. (2019-2021)**

**Design and validation of personalised risk prediction models over Brazilian health care data. (2019-2020)**

**Stratification of patients suffering from myalgic encephalomyelitis/chronic fatigue syndrome. (2019-2020)**

**Standardisation of wearable-based algorithms for healthcare applications in developing countries. (2018-2019)**

**The 100 million Brazilian linked data and datacentre. (2016-2021)**

**Integrating socioeconomic and health data to combat malaria. (2016-2019)**

**Treating heterogeneity and uncertainty in data integration: case study on Brazilian databases. (2016-2018)**

**Affordable Health Technologies Workshop (Rio de Janeiro, May 2019)**

**Working Groups: Autonomous Robotics, Robot Task Representation, Ethical Design and Application of Robotic Systems, Personal Data Privacy Process.**

## Partnership



Universidad de los Andes

## Featured Projects

### The 100 Million Cohort



<https://cidacs.bahia.fiocruz.br/>

- ✓ 114 million individuals / 40 million families benefiting from social programmes (ex. cash transfers) linked to public healthcare data to assess health outcomes. Coverage: 2006-2015.
- ✓ **Bespoke big data linkage algorithms and machine learning-based analytical models.**
- ✓ Support to other projects: Zika platform, Social Policy & Health Inequality (Glasgow), Equity and Sustainability, Genomic Epidemiology, Prediction and Measurement of the Impact of Spatially-distributed Factors on Health (St George's University and Grantham Research Institute/LSE).



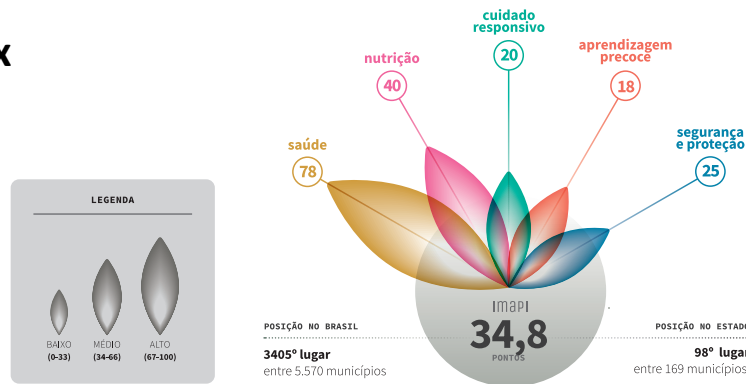
- ✓ Performance index based on the Nurturing Care Framework to all the 5,570 Brazilian municipalities.

### Early Childhood Development Friendly Index



### Vailalópolis (TO)

CENTRO-OESTE | PEQUENO PORTE | IDHM: 0,42



<http://200.128.60.86:3838/imapi/>

| Município               | UF | Índice | Nível |
|-------------------------|----|--------|-------|
| 1 Quissamã              | RJ | 53     | Alto  |
| 2 Espera Feliz          | MG | 47     | Alto  |
| 3 Pompeu                | MG | 46     | Alto  |
| 4 Bom Despacho          | MG | 46     | Alto  |
| 5 Afogados da Ingazeira | PE | 46     | Alto  |
| 6 Raul Soares           | MG | 46     | Alto  |
| 7 Itacombi              | MG | 45     | Alto  |

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