

# DANIEL HOMOLA

[www.danielhomola.com](http://www.danielhomola.com) | [GitHub](#) | [Google Scholar](#) | [Twitter](#) | [LinkedIn](#)

## EXPERIENCE

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### Data Scientist

Nov 2016 -

*QuintilesIMS*

*London, UK*

- As a data scientist in the Predictive Analytics team, I use machine learning (Python, R, Spark) to help our clients from the pharmaceutical sector with their challenging projects. These include (rare) disease detection, patient ranking, population clustering, feature selection and prioritisation.

### Science to Data Science

Aug 2016 - Sep 2016

*Marks and Spencer*

*London, UK*

- Using advanced NLP and ML techniques, our team of four is building a chatbot which can interact with customers and hence automate a portion of the customer service of M&S.

### Computational and Systems Medicine

Oct 2013 - Sep 2016

*Imperial College London*

*London, UK*

- Created [www.corrmapper.com](http://www.corrmapper.com): an online research tool for the integration, exploration and interactive visualisation of complex biomedical datasets. CorrMapper uses advanced feature selection and covariance estimation algorithms with state of the art visualisation modules to reveal the relevant correlation networks of biomedical datasets. The paper of this project is in preparation.
- Other notable projects from my PhD: [Science Flask](#), [BorutaPy](#), [MIFS](#).

### Raes Lab

Oct 2012 - Sep 2013

*VIB*

*Brussels, Belgium*

- Optimized the sample collection for 5000 participants in R, for the [Flemish Gut Flora Project](#). This reduced the time the samples spent outside of freezers substantially, see [Falony et al.](#)

### National Heart & Lung Institute

Feb 2012 - Sep 2012

*Imperial College London*

*London, UK*

- Developed a novel tool for the normalisation of 16S rRNA gene copy numbers by utilising various evolutionary models. The software, written in R, also provides advanced visualisation of Operational Taxonomic Unit tables with multiple metadata vectors and phylogenetic trees, see [Molyneaux et al.](#)

### Institute of Enzymology

Jun 2009 - Sep 2011

*Hungarian Academy of Sciences*

*Budapest, Hungary*

- Demonstrated the ubiquitous presence and vital role of intrinsically disordered proteins in a wide range of biomineralisation processes, see [Kalmar et al.](#)

## EDUCATION

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**Imperial College London** Oct 2013 - Sep 2016  
*PhD in Bioinformatics* London, UK

- *Modules studied:* machine learning, multivariate statistics, advanced visualisation, data integration.
- *Thesis:* Integration and visualization of clinical-metabolic datasets for medical-decision making.

**VIB** Oct 2012 - Sep 2013  
*PhD candidate in Bioinformatics* Brussels, Belgium

- *Modules studied:* human gut microbiome, metagenomics, bioinformatics.
- Relocated to London after a year with mutual agreement.

**Imperial College London** Oct 2011 - Sep 2012  
*MSc in Bioinformatics and Theoretical System Biology – Distinction* London, UK

- *Modules studied:* bioinformatics, statistics, programming (Python, R, MySQL), data analysis.
- *Thesis:* Tool development for 16S rRNA gene copy number normalisation and visualisation.

**Eötvös Loránd University** Sep 2006 - Jun 2010  
*BSc in Biology – First Class Honours* Budapest, Hungary

- *Modules studied:* biochemistry, cell biology, genetics, evolutionary biology, immunology.
- *Thesis:* Universal laws in the construction of protein and gene networks.

## TECHNICAL STRENGTHS

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<b>Coding</b>	Python (advanced), R (advanced), Javascript (intermediate), Matlab (intermediate)
<b>ML</b>	linear, lasso and logistic regression, random forest, gradient boosting, SVM, PCA, kNN, graphical lasso, feature selection: L1, ensemble, mutual information based
<b>Database</b>	MySQL, SQLite
<b>Web</b>	AWS, HTML5, CSS, Flask, D3.js, DC.js
<b>Tools, OS</b>	Git, L <sup>A</sup> T <sub>E</sub> X, Linux, Windows

## AWARDS

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<b>Jun 2015</b>	Imperial-MIT Global Fellows Programme, Boston
<b>Oct 2013</b>	STRATiGRAD Training Award for PhD stipend, sponsored by the Wellcome Trust
<b>Oct 2011</b>	BBSRC Masters Training Award for MSc in Bioinformatics, covering tuition fees

## EXTRACURRICULAR

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<b>2013</b>	Rowed in the novice eight squad of Imperial College London
<b>2005 - 2011</b>	Award winning, freelance web-designer with dozens of delivered projects
<b>2000 - present</b>	Playing the guitar, writing, recording music
<b>1990 - present</b>	Skiing, snowboarding