

## Summary

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- Problem-solving, inquisitive and forward-thinking data scientist with 3+ years of experience in machine learning, data analytics and statistics, solving real world business problems
- Expertise in designing and implementing end to end machine learning solutions
- Energetic team player with excellent project management, organisational and communication skills
- Valid Stamp 4 holder (full permission to work in Republic of Ireland)

## Work Experience

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### Course Instructor (Part time, Contract, Remote)

May 2020 – Present

- Designed and created guided projects in the fields of data science, machine learning and computer science
- Delivered projects with code, explanation and quiz to thousands of students worldwide

### Analytics Manager (Full time, Permanent)

Nov 2019 – May 2020

Group Internal Audit, Bank of Ireland, Dublin, Ireland

- Designed, planned and implemented analytical solutions to visualize operational and quality metrics and customer impact for several portfolios (Mortgages, Car Finance, and Corporate Banking)
- Undertook integrated and individual assignments for senior management pertaining to Credit, Capital, and Customer Conduct for Retail and non-Retail products and services
- Analysed large complex datasets from multiple sources through SQL and Tableau
- Converted business requirements into actionable insights and usable management information using CRISP-DM
- Assisted in the transition from Data Warehouse (Teradata) to Data Lake (Hadoop, Spark)

### Software Developer (Full time, Contract)

Sep 2018 – Oct 2019

National Institute for Bioprocessing Research and Training (NIBRT), Dublin, Ireland

- Developed a monitoring and analytical platform for controlling and analysing biopharmaceutical processes, and forecasting and predicting risk – funded by IDA and Siemens Ireland
- Played key part in deploying Hadoop and Spark (backend) and RShiny and Plotly (frontend) application
- Researched and developed machine learning (supervised & unsupervised), time series (forecasting), and multivariate statistical models, using R and Spark (easily translatable to Python/Java)
- Deployed and maintained ML models, and improved quality through hyperparameter tuning
- Managed and maintained code and documentation to high detail and clarity
- Provided strategic recommendations to senior management for improving process quality and final product yield, while decreasing downtime and freeing up resources

### Statistical Modeller (Full time, Contract)

Oct 2017 – Aug 2018

Centre for Food Safety, University College Dublin, Dublin, Ireland & Creme Global, Dublin, Ireland

- Planned, designed, and executed data analytics solution (in R) for Ireland's 5 largest food manufacturing companies – within 8 months. Solution is under patent processing with NovaUCD and Crème Global
- Gathered and formatted complex large-scale microbiome data, and designed and implemented machine learning models to (i) identify factors increasing/decreasing risk, and (ii) predict overall risk
- Effective data communication of modelling outputs (using smart visualisations) with industry partners resulting in effective changes in their production lines to prevent growth of pathogenic bacteria
- [Industry funded project \(Enterprise Ireland, Crème Global and 5 food companies\) - bit.ly/300jX0p](https://bit.ly/300jX0p)

### PhD research graduate - Computational Infection Biology

Sep 2013 – Sep 2017

Conway Institute, University College Dublin, Dublin, Ireland

- Designed and executed the analyses of 2785 bacterial genomes using custom-built automated pipeline in Perl
- Developed and utilised machine learning models (in R) to predict bioactivities of peptides
- Mentored and guided undergrad and graduate students for their projects in bioinformatics and machine learning

- Enhanced science communication by attending and organising conferences and symposiums, resulting in 9 presentations in oral and poster format (including best oral presentation award)
- Developed strong project management skills by collaborating with researchers in Ireland and abroad

#### Research intern - Molecular modelling

Jan 2013 – Jun 2013

CSIR - Institute of Genomics and Integrative Biology, New Delhi, India

- Created structural models of small peptides based on replica exchange molecular dynamics (REMD)
- Gathered experience in uploading and downloading data, and running scripts on supercomputer

#### Research project - Structural bioinformatics

May 2012 – Sep 2012

King's College London, UK

- Analysed over 400 protein complexes for their backbone hydrogen bonds, which led to identification of vulnerable bonds at the interfaces which differentiates transient and obligate protein complexes
- Gained experience in performing text mining (Perl) and statistical analyses (R)

#### Research project - Bioinformatics

Jan 2011 – May 2011

SASTRA University, Thanjavur, India

- Analysed and visualised 850 protein sequences belonging to snake toxins and identified over 100 distinguishable sequence properties, each with different weights
- Developed and implemented a classifier to classify snake toxins proteins and subsequently converted it to a webserver which was later published as TFTX server (<http://sblab.sastra.edu/submittf.html>)
- Organised and attended national level conferences, leading to Best innovator category presentation award

## Education

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#### Computational Infection Biology, Ph.D

Sep 2013 - Sep 2017

University College Dublin, Ireland

#### Bioinformatics, M.Sc

Sep 2011 - Sep 2012

King's College London, UK

#### Bioinformatics, B.Tech

Jul 2007 - May 2011

SASTRA University, Thanjavur, India

## Skills

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- Extensive experience in R (8+ yrs), Perl (6+ yrs), Python (3+ yrs) and databases (SQL and MongoDB)
- Visualisation tools/packages – Tableau, Plotly, RShiny
- Big Data technologies – Hadoop, Hive, Spark (Python/R)
- ML algorithms – Supervised, Unsupervised, Semi-supervised, Reinforcement
- Familiar with other languages such as Scala, Java, C, C++, PHP, CSS and HTML
- Others – RShiny, Numpy, Pandas, scikit-learn, Jupyter, Cloudera, Confluence, Jira, GitLab, Docker
- Development frameworks – Agile, Git, CRISP-DM
- Expertise in several large-scale data analyses projects
- Strong skills in stakeholders interactions and managing expectations
- Tutored several professionals in R, Python and Spark through First Tutor website ([bit.ly/2Mp4L4L](http://bit.ly/2Mp4L4L))

## Awards, honours and hobbies

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Recipient of Wellcome Trust PhD scholarship amounting to €183,271

14 oral and poster presentations in conferences in India, Europe and USA

Organiser of 1 national and 1 international conference

2 travel grants for conferences in the UK and the USA

First introduced to programming at 15, never looked back

Mountain climber (Kilimanjaro and Toubkal), chef, footballer, cyclist, globetrotter