Thiago de Paula Oliveira | CV

Statistical computing: R, Shiny, RStudio, Bash, Maple, SageMath, C++, blupf90

▶ Computational programs: LaTeX, Markdown, Office, GitHub, Inkscape

Operational systems:
Linux, Mac, Windows

▶ Languages: Portuguese (native), English

▶ Research web pages: ORCID, Plubons, Personal Webpage



Solution General Information

Work Address: The University of Edinburgh, Easter Bush Campus, Midlothian EH25 9RG, Scotland

▶ E-mail Address: thiago.oliveira@ed.ac.uk

▶ Nationality: Brazilian

>>> Summary

Enthusiastic **biostatistician** with ten years of academic experience and a passion for applied statistics to help people understand their data. Experienced professional in statistical modelling and experimental design, working in different areas such as agriculture, sports, and genetics. I have science production covering those areas with peer-reviewed papers and technical reports. In addition, exceptional analytical and communication skills were developed as a result of interaction with clients. For more information about me, please, visit my blog https://prof-thiagooliveira.netlify.app/.

Education

2014 – 2018	PhD in Statistics	ESALQ/USP
	 Title: Estimating the longitudinal concordance correlation through fixed ef components of polynomial mixed-effects regression model Advisor: Dr. Silvio Sandoval Zocchi and Prof. John Hinde Department of Exact Sciences 	fects and variance
2016	Visiting scholar – internship	NUI Galway
2012 – 2014	 Supervisor: Prof. John Hinde School of Mathematics, Statistics and Applied Mathematics Development of new methodology in Concordance Analysis MSc in Statistics	ESALQ/USP
2012 - 2014		<u> </u>
	 Title: Mixed-effects models applied to hue peel color of papaya cv. Sunrise an scanner and colorimeter over time Advisor: Dr. Silvio Sandoval Zocchi Department of Exact Sciences 	Solo measured by
2007 - 2012	BSc in Agricultural Engineering	ESALQ/USP

▶ Title: Calibration of scanner methodology to evaluate 'Golden' papaya peel color.

Advisor: Dr. Silvio Sandoval Zocchi

▶ Department of Exact Sciences

Professional experience

2020-Actual	Researcher Fellow	University of Edinburgh
	 PI: Dr. Gregor Gorjanc Quantitative genetics and genomics of plant breeding The Roslin Institute 	
2020	Postdoc in Biostatistics	NUI Galway
	 Supervisor: Prof. Dr. Carl Scarrott Early Detection of Secondary Waves of Covid-19 Infections School of Mathematics, Statistics & Applied Maths; and Insign 	ght Centre for Data Analytics
2020	Postdoc in Biostatistics	NUI Galway
	 Supervisor: Prof. Dr. John Newell Aspire Academy research collaboration project School of Mathematics, Statistics & Applied Maths; and Insignation 	ght Centre for Data Analytics
2019	Postdoc in Biostatistics	NUI Galway
	 Supervisor: Prof. Dr. John Newell Statistical modeling for optimizing athlete performance School of Mathematics, Statistics & Applied Maths; Orrectanalytics 	o; and Insight Centre for Data
2018-2019	Postdoc in Statistics	ESALQ/USP
	 Advisor: Prof. Dr. Clarice Garcia Borges Demétrio Title: Estimation of the longitudinal concordance correlation Department of Exact Sciences 	function: The lcc package
2017 - 2019	Assistant Professor	ESALQ/USP

▶ Calculus I and II and Experimental Statistics

>>> Technical Skills

▶ Statistics:

High statistical awareness, focusing on statistical modelling and data analysis. I've worked with generalized linear mixed models, splines, longitudinal data, concordance analysis, state-space approach, pedigree and genomic-based models, graphical models, and non-linear models. I have experience with classical and Bayesian views.

▶ Genetics: Simulating animal and plant breeding programmes to test and com-

pare new schemes or evaluate how to improve genetic mean and variance. Experience in helping breeders with statistical analysis of real data using

software/packages like blupf90, BGLR, JAGS, and STAN.

Sports: Theory and application of statistical methods to evaluate athlete perfor-

mance and clinical trials.

▶ Agriculture: Planning experimental designs, analysis of entomologic and vegetable

production data

▶ R Packages: Enthusiast in creating R packages or functions as a solution to standardize

statistical analysis and delivery faster responses to clients. Some of public

packages: AlphaPart, AlphaSimR, lcc.

Dashboard: Skills in creating shiny dashboards as a solution for interactive data visu-

alization and analysis for clients. Example of public shiny app I developed:

COVID-19 prediction, Experiment Design.

GitHub: Managing the Highlander Lab and AlphaGenes organizations. I handle

repositories, actions, projects, teams, and pull requests.

▶ HPC Servers: Ability to work with **high-performance computers** at the University of

Edinburgh to do statistical analysis.

Publications

Table 1: Publications and indexes summary

	Tubic I.	1 abilication	5 and mac	co samma	<i>y</i>
Article	R Package	Abstract	Preprint	H-Index	Times Cited
9	2	12	1	6	82

Papers in Peer-Reviewed Journals

Article Lara, L.A.d.C.; Pocrnic, I.; Oliveira, T.d.P.; Gaynor, C.; Gorjanc, G. Temporal and genomic

analysis of additive genetic variance in breeding programmes, Heredity, 2021. DOI: 10.1038/

s41437-021-00485-y

Article **Oliveira, T.P.**; Buinvels, G; Pedlar, C.; Newell, J. Modelling menstrual cycle length in athletes using state-space models, **Scientific Reports**, 11, 2021. DOI: 10.1038/s41598-021-95960-1

Article Oliveira, T.P.; Moral, R.A. Global Short-Term Forecasting of Covid-19 Cases, Scientific Re-

ports, 2021. DOI: https://doi.org/10.1038/s41598-021-87230-x

Article Oliveira, T.P.; Moral, R. A.; Zocchi, S. S.; Demetrio, C. G. B; Hinde, J. Icc: an R package

to estimate the concordance correlation, Pearson correlation, and accuracy over time. PeerJ.

Accepted for publication in August of 2020. DOI: 10.7717/peerj.9850

Article Kleina, H. T.; Kudlawiec, K.; Esteves, M. B.; Daibó, M.; Oliveira, T.P.; Maluta, N.; Lopes, J.

S.; Mio, L. M. Association of leaf morphology, vector settling and feeding behavior with resistence of plum genotypes to leaf scald disease. **Entomologia Experimentalis et Applicata**. Accepted

for publication in August of 2020. DOI: 10.1007/s10658-020-02104-8

Article Popin, G. V.; Santos, A. K. B.; Oliveira, T.P.; Camargo, P. B.; Cerri, C. E. P.; Siqueira-Neto;

M. Sugarcane straw management for bioenergy: effects of global warming on greenhouse gas emissions and soil carbon storage. **Mitigation and Adaptation Strategies for Global Change**,

2019. Link: https://doi.org/10.1007/s11027-019-09880-7

Article

Esteves, M. B.; Kleina, H. T.; Sales, T. M.; **Oliveira, T.P.**; Lara, I. A. R.; Almeida, R. P. P.; Coletta-Filho, H. D.; Lopes, J. R. S. Transmission efficiency of *Xylella fastidiosa* subsp. *pauca* sequence types by sharpshooter vectors after *in vitro* acquisition. **The American Phytopathological Society**, v. 109, no.2, 2019. Link: https://doi.org/10.1094/PHYT0-07-18-0254-FI

Article

Oliveira, T.P.; Hinde, J.; Zocchi, S. S. Longitudinal Concordance Correlation Function Based on Variance Components: An Application in Fruit Color Analysis. **Journal of Agricultural, Biological, and Environmental Statistics**, v. 23, p. 233-254, 2018. Link: https://doi.org/10.1007/s13253-018-0321-1

Article

Oliveira, T.P.; Zocchi, S. S.; Jacomino, A. P. Measuring color hue in 'Sunrise Solo' papaya using a flatbed scanner. **Revista Brasileira de Fruticultura**, v. 39, p. e-911, 2017. Link: http://dx.doi.org/10.1590/0100-29452017911

Software

R package

Gorjanc, Gregor; Obsteter, Jana; Oliveira, T.P. Partition/Decomposition of Breeding Values by Paths of Information, R package version 0.9.3, 2022. See also https://github.com/AlphaGenes/AlphaPart/tree/version-0.9.3

R package

Oliveira, T.P.; Moral, R. A.; Hinde, J.; Zocchi, S. S.; Demetrio, C. G. B. Icc: Longitudinal Concordance Correlation, R package version 1.0.2, 2018. See also https://github.com/Prof-ThiagoOliveira/lcc

Preprints

Preprint

Oliveira, T.d.P.; Obšteter, J.; Pocrnic, I.; Heslot, N.; Gorjanc, G. A method for partitioning trends in genetic mean and variance to understand breeding practices, **BioRxiv**, 2022. DOI: https://doi.org/10.1101/2022.01.10.475603

Proceedings

Extended abstract

Oliveira, T.P.; Obšteter, J.; Pocrnic, I.; Gorjanc, G. A method for partitioning trends in genetic mean and variance, **In: 36th edition of the IWSM conference**, 2022

Extended abstract

Oliveira, T.P.; Obšteter, J.; Pocrnic, I.; Gorjanc, G. A method for partitioning trends in genetic mean and variance to understand/improve breeding practices. In: World Congress on Genetics Applied to Livestock and Production, 2022

Extended abstract

Houaga, I; Oliveira, T.P.; Lavrenčič, E.; Banga, C.B.; Gorjanc, G. Spatial modelling in genetic evaluation of South African Holstein cattle population. In: World Congress on Genetics Applied to Livestock and Production, 2022

Extended abstract

Taniguti, C.H.; Taniguti, L.M.; Gesteira, G.S.; Oliveira, T.P.; Lau, J.; Ferreira, G.C.; Amadeu, R.R.; Byrne, D.; Riera-Lizarazu O.; Pereira, G.S.; Mollinari, M.; Garcia, A.F. Reads2Map: Practical and Reproducible Workflows to Build Linkage Maps from Sequencing Data. In: Plant and Animal Genome XXIX Conference, 2021

Extended abstract

Oliveira, T.P.; Moral, R.A.; Hinde, J.; Zocchi, S.S.; Demétrio, C.G.B. The longitudinal concordance correlation. **In: 34**th **International Workshop on Statistical Modelling**, 2019, Guimarães. Proceedings of the 34th International Workshop on Statistical Modelling, 2019. v. 2.

Abstract

Zocchi, S.S.; **Oliveira, T.P.** Propagação de Penicillium em Iaranja (Citrus cinensis): estimulando o aprendizado de cálculo. 1º Oficina para o desenvolvimento docente de 2017, "Novas abordagens de ensino - compartilhando experiências na ESALQ", 2017

Abstract

Oliveira, T.P.; Hinde, J.; Zocchi, S.S. Longitudinal Concordance correlation function based on variance components: an application in fruit color analysis. NUIG Statistics MiniSymposium, 2016.

Extended abstract

Oliveira, T.P.; Moral, R.A.; Hinde, J.; Demétrio, C.G.B.; Zocchi, S.S.; Zanardo, A.B.R.; Delalibera Jr., I. Generalized linear mixed models applied to overdispersed proportion data in a fungal occurrence study. **In: 30**th **International Workshop on Statistical Modelling**, 2015, Linz. Proceedings of the 30th International Workshop on Statistical Modelling, 2015. v. 2. p. 203-206.

Abstract

Oliveira, T.P.; Moral, R.A.; Hinde, J.; Demétrio, C.G.B.; Zocchi, S.S. Generalized linear mixed models: an application in fungal occurrence data. In: 60° Reunião Anual da Região Brasileira da Sociedade Internacional de Biometria e 16° Simpósio de Estatística Aplicada à Experimentação Agronômica, 2015, Presidente Prudente. Reunião Anual da Região Brasileira da Sociedade Internacional de Biometria, n. 60, Presidente Prudente, 2015. 172 p., 2015.

Abstract

Oliveira, T.P.; Zocchi, S.S.; Ferreira, I. E.P. Mixed models for analysis of hue peel colour of papaya (Carica papaya L.) cv. Sunrise Solo, measured along time by means of a scanner and a colorimeter. In: XXVII International Biometric Conference, 2014, Florence, Italy. Proceedings of XXVII International Biometric Conference, 2014. v. 1.

Abstract

Oliveira, T.P.; Zocchi, S.S. Mixed models for analysis of hue peel color of papaya (Carica papaya L.) cv. 'Sunrise Solo', measured along time by means of a scanner and a colorimeter. I Workshop on Experimental Statistics e IV Encontro dos Alunos do PPG em Agronomia (Estatística e experimentação agrnômica), 2014.

Extended abstract

Oliveira, T.P.; Zocchi, S. S. . Análise de dados circulares com aplicação em tonalidade da cor de casca de mamão 'Sunrise Solo'. In: 58ª Reunião Anual da Região Brasileira da Sociedade Internacional de Biometria e 15º Simpósio de Estatística Aplicada à Esperimentação Agronômica, 2013, Campina Grande. Anais..., 2013. p. 202.

Extended abstract

Oliveira, T.P.; Zocchi, S. S. Análise de dados circulares com aplicação em tonalidade da cor de casca de mamão 'Sunrise Solo'. In: **58º Reunião Anual da Região Brasileira da Sociedade Internacional de Biometria e 15º Simpósio de Estatística Aplicada à Esperimentação Agronômica**, 2013, Campina Grande. Anais..., 2013. p. 202.

Abstract

Oliveira, T.P.; Zocchi, S. S. Modelos lineares de efeitos mistos: um estudo de caso. Encontro dos Alunos do Programa de Pós-Graduação em Estatística e e Experimentação Agronômica, 2013

Abstract

Camara, G. M. S.; Oliveira, T.P.; Navarro, B. L.; Brigliadori, L. D. Crescimento e produtividade de soja em três arranjos espaciais. In: VI Congresso Brasileiro de Soja, 2012, Cuiabá-MT. Anais. Londrina-PR: Embrapa Soja, 2012. v. 1. p. 151-153.

Thesis

Thesis

Oliveira, T.P. Estimating the longitudinal concordance correlation through fixed effects and variance components of polynomial mixed-effects regression model. University of São Paulo, 2018

Thesis

Oliveira, T.P. Mixed-effects models applied to hue peel color of papaya cv. Sunrise Solo measured by an scanner and colorimeter over time. University of São Paulo, 2014

Reviewer



Phd in Statistics · Edinburgh, Scotland · thiago.oliveira@ed.ac.uk · Phone: +44 7474 338884

Nascimento, C.O.; Lara, I.A.R. Analysis of color peel of the papaya cv. Sunrise Solo through of the mixed linear regression model. Thesis (Master's Degree in Statistics) – University of

São Paulo, Piracicaba, Brazil.

Silva, G.P.; Moral, R. A. Frame by frame completion probability of an American football pass.

Thesis (Master's Degree in Statistics) - University of São Paulo, Piracicaba, Brazil.

>>> Awards

2020	Runner-up Poster on Young-ISA Twitter Poster Conference promoted by the Irish Statistical
2020	Association. Poster Title: Global short-term forecasting of Covid-19 cases. Authors: Oliveira , T.P. ; Moral, R.A., July, 2020
2020	Marie Skłodowska-Curie COFUND Fellowship under the project "Quantitative genetics and genomics of plant breeding"
2010	Honorable Mention at the 18 th USP International Symposium of Undergraduate Research, University of São Paulo.

Extracurricular courses

2021	Workflows with Nextflow, University of Edinburgh (36h)
2021	Introduction to Bash Shell Scripting, Coursera Project Network (4h)
2021	World Meeting of the International Society for Bayesian Analysis (24h)
2021	Equality & Diversity Essentials (2h)
2021	UKRI-BBSRC Workshop on Computing in the Biosciences (6h)
2021	Challenging Unconscious Bias (1h)
2021	Genome-wide prediction of complex traits in humans, plants and animals (30h)
2020	Programming Fundamentals, Coursera, Duke University, USA. (32h)
2019	Survival Analysis in R. DataCamp, USA. (4h)
2019	Building Web Applications in R with Shiny: Case Studies Course. DataCamp, USA. (4h)
2019	Building Dashboards with shinydashboard. DataCamp, USA. (4h)
2019	Building Web Applications in R with Shiny. DataCamp, USA. (4h)
2019	Introduction to Python. DataCamp, USA. (4h)
2019	Statistical Modeling in R (Part 1). DataCamp, USA. (4h)
2019	Intermediate R. DataCamp, USA. (6h)
2019	Introduction to R. DataCamp, USA. (4h)
2018	Machine Learning Toolbox. DataCamp, USA. (4h)

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2016	Longitudinal and Incomplete Data – USP (30h)
2015	Short curse on Regression Models – Coursera, MOOC, USA (36h)
2015	Short curse on Dimensionality Reduction – USP
2015	Additive Generalized Models with P-splines – RBras
2015	Exploring interactive graphical interfaces in R – RBras
2015	Exploring the Flexibility of Linear Mixed Models – RBras
2015	Special Topics in Multivariate Analysis – RBras
2014	Generalized Additive Models with P-splines – USP
2013	Short curse on Statistics: Making Sense of Data – Coursera, MOOC, USA
2013	Short curse on Mathematical Biostatistics Boot Camp – Coursera, MOOC, USA
2013	Introduction to Categorical Data Analysis – USP
2013	Structural Equations Models – USP
2013	Some Important Topics of Asymptotic Theory – USP

Event participation

2022	36th International Workshop on Statistical Modelling (IWSM)
2022	World Congress on Genetics Applied to Livestock Production (WCGALP)
2021	7th Summer Institute in Statistics for Big Data (SISBID)
2021	Genome-wide prediction of complex traits in humans, plants and animals
2021	Software Licensing Workshop
2020	71 st Annual Meeting of European Federation of Animal Science (EAAP)
2020	Why R? 2020 conference organized remotely
2019	The Inaugural Young-ISA Meeting – Maynooth, Co. Kildare, Ireland
2019	$34^{\it th}$ meeting of the International Workshop on Statistical Modelling (IWSM) – Guimarães, Portugal.
2016	NUIG Statistics MiniSymposium. Longitudinal Concordance correlation function based on variance components: an application in fruit color analysis.
2015	$30^{\it th}$ meeting of the International Workshop on Statistical Modelling (IWSM) – Linz, Vienna.
2015	60 th meeting of the Brazilian Region International Biometric Society (RBras) e 16° "Simpósio de Estatística Aplicada à Experimentação Agronômica" – Presidente Prudente, SP, Brazil

	Phd in Statistics · Edinburgh, Scotland · thiago.oliveira@ed.ac.uk · Phone: +44 7474 338884
2015	How to Write for and Get Published in Scientific Journals – Piracicaba, SP, Brazil
2014	II Workshop on Longitudinal and Incomplete Data – Piracicaba, SP, Brazil
2014	I Workshop on Experimental Statistics e IV "Encontro dos Alunos do PPG em Agronomia" – Piracicaba, SP, Brazil
2013	58^{th} meeting of the Brazilian Region International Biometric Society e 15° "Simpósio de Estatística Aplicada à Esperimentação Agronômica" – São Paulo, SP, Brazil
2012	57^{th} meeting of the Brazilian Region International Biometric Society – Piracicaba, SP, Brazil
2011	19^{th} meeting of the USP International Symposium of Undergraduate Research – Piracicaba, SP, Brazil
2010	18^{th} meeting of the USP International Symposium of Undergraduate Research – Piracicaba, SP, Brazil

>>> Teaching and Supervision

	Taught Modules
2018	LCE0602 Experimental Statistics, University of São Paulo, Piracicaba, Brazil, <i>Agricultural Engineering programme</i> , August-December.
2018	LCE0220 Calculus II, University of São Paulo, Piracicaba, Brazil, <i>Agricultural Engineering programme</i> , August - December.
2018	LCE0120 Calculus I, University of São Paulo, Piracicaba, Brazil, <i>Agricultural Engineering programme</i> , August - December.
2018	LCE0120 Calculus I, University of São Paulo, Piracicaba, Brazil, <i>Agricultural Engineering programme</i> , February - June.
2018	LCE0220 Calculus II, University of São Paulo, Piracicaba, Brazil, <i>Agricultural Engineering programme</i> , February - June.
2018	LCE0130 Differential and Integral Calculus, University of São Paulo, Piracicaba, Brazil, Food Science programme, February - June.
2017	LCE0602 Experimental Statistics, University of São Paulo, Piracicaba, Brazil, <i>Agricultural Engineering programme</i> , August - December.
2017	LCE0120 Calculus II, University of São Paulo, Piracicaba, Brazil, <i>Agricultural Engineering programme</i> , August - December.
	Taught Short Courses
2021	Visualization and Data Structure on Breeding Programme Modelling with AlphaSimR, University of Edinburgh, Scotland
2018	I Workshop on Introduction to Experimental Design, University of São Paulo, Piracicaba, Brazil
	Teaching Assistance
2016	LCE0120 - Calculus I, University of São Paulo, Piracicaba, Brazil, taught by Dr. Silvio Sandoval Zocchi for undergraduate students of the Agricultural Engineering programme, 120h
2015	LLCE0220 Calculus II, University of São Paulo, Piracicaba, Brazil, taught by Prof. Idemauro Antonio Rodrigues de Lara for undergraduate students of the Agricultural Engineering programme, August-December, 120h

2015	LLCE0211 Statistics, University of São Paulo, Piracicaba, Brazil, taught by Dr. Silvio Sandoval Zocchi for undergraduate students of the Agricultural Engineering programme, February-June, 120h
2013	LLCE0220 Calculus II, University of São Paulo, Piracicaba, Brazil, taught by Prof. Idemauro Antonio Rodrigues de Lara for undergraduate students of the Agricultural Engineering programme, August-December, 120h
2013	LLCE0166 Calculus and Mathematics Applied to Food Sciences, University of São Paulo, Piracicaba, Brazil, taught by Dr. Silvio Sandoval Zocchi for undergraduate students of the Food Sciences programme, February-June, 120h

Volunteer experience
Class tutor in Calculus at University of São Paulo – ESALQ/USP (5 months)
Class tutor in Statistics at University of São Paulo – ESALQ/USP (5 months)
Class tutor in Statistics at University of São Paulo – ESALQ/USP (5 months)
Supervision

Das, Kishor. Statistical Approaches for Method Comparison Studies involving Functional Responses with Applications in Elite Sports. National University of Ireland Galway, Galway, Ireland. PhD **Supervisors**: Newell, J. and **Oliveira, T.P.**

>>> Invited talks

2022

2021	Modelling menstrual cycle length in athletes using state-space models. Statistical weekly meeting, Brazil
2020	Global Short-Term Forecasting of Covid-19 Cases. Webinar Series of the Young-ISA, Ireland
2020	Global Short-Term Forecasting of Covid-19 Cases. Workshop on Applied Statistics: Prediction models for COVID-19, Artificial Intelligence and Postgraduate Research during pandemic time. University of São Paulo, Brazil
2020	Estimating NBA athlete performance using hierarchical models, National University of Ireland Galway, Ireland, 21 April 2020
2019	Modelling athletes menstrual cycle length using state space models. NUI Galway, Ireland
2019	Modelling menstrual cycle length using state space models. The Inaugural Young-ISA Meeting – Maynooth, Ireland
2016	Longitudinal concondance correlation function based on variance components: an application in fruit color – NUI Galway

Professional Websites

Blog	https://prof-thiagooliveira.netlify.app	Link
GitHub	https://github.com/Prof-ThiagoOliveira	Link

>>> Funding - Grants & Contracts

2020-2023 TRAIN@Ed Fellow Grant

	 Marie Skłodowska Curie COFUND fellowships PI: Gregor Gorjanc Quantifying the Drives of Genetic Change in Plant Breeding Project Funding: £70,000 	
2020-2020	Researcher in Biostatistics	Postdoctoral
	 Science Foundation Ireland PI: Prof. Carl Scarrott Project: Early Detection of Secondary Waves of Covid-19 Infections Project Funding: €32,618 	
2020-2020	Researcher in Biostatistics	Postdoctoral
	 Science Foundation Ireland PI: Prof. John Newell Project: Aspire Academy research collaboration project Project Funding: €20,000 	
2019-2019	Researcher in Biostatistics	Postdoctoral
	 Science Foundation Ireland PI: Prof. John Newell Project: Development of statistical model with application in athlete performance Project Funding: €12,417,097 	mance
2018-2019	Researcher in Statistics	Postdoctoral
	 Coordination of Improvement of Higher Education Personnel PI: Prof^a. Clarice G. B. Demétrio Project: Estimation of Longitudinal Concordance Correlation Function: The Grants awarded: approximately £7,000 	e lcc package

Media and Impact

	Blog posts	
Post	Moral, R.A.; Oliveira, T.P.; Parnell, A. How hard is it to predict COVID-19 cases? 2020. URL: https://www.hamilton.ie/covid19/posts/2020-10-01-how-hard-to-predict-cases/	
Post	Oliveira, T.P. Expressions in C++. 2020. URL: https://prof-thiagooliveira.netlify.app/post/expressions/	
Post	Oliveira, T.P. Signed and Unsigned Binary Numbers. 2020. URL: https://prof-thiagooliveira.netlify.app/post/signed-and-unsigned-binary-numbers/	
Post	Oliveira, T.P. The seven steps of a programer. 2020. URL: https://prof-thiagooliveira.netlify.app/post/the-seven-steps-of-a-programer/	
>>> References		

▶ Phone: ▶ Email: gregor.gorjanc@roslin.ed.ac.uk Prof. Dr. Carl Scarrott **NUI** Galway ▶ Phone: +64 3 3642587 ▶ Email: carl.scarrott@canterbury.ac.nz Prof. John Newell NUIGalway ▶ Phone: +353 (0) 91 524411 ▶ Email: john.newell@nuigalway.ie Prof. John Hinde **NUIGalway >** Phone: +353 (0) 91 492043 ➤ Email: john.hinde@nuigalway.ie Dr. Rafael de Andrade Moral Maynooth University ▶ Phone: +353 (1) 708 6645 ▶ Email: rafael.deandrademoral@mu.ie

Address: The Roslin Institute, University of Edinburgh, Edinburgh, Scotland. H91 TK33