

Roi Naveiro

TERNURE TRACK ASSISTANT PROFESSOR · QUANTITATIVE METHODS DEPARTMENT, CUNEF UNIVERSITY

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Education

PhD in Statistics and Operations Research. ICMAT - Institute of Mathematical Sciences from the Spanish Research Council and Complutense University of Madrid

Madrid, Spain

CUM LAUDE AND INTERNATIONAL DISTINCTIONS. AWARDED BY THE SPANISH NATIONAL RESEARCH COUNCIL (CSIC) AS THE BEST DOCTORAL THESIS IN ARTIFICIAL INTELLIGENCE RESEARCH.

2016 - 2020

- Advisors: Professor David Ríos Insua (ICMAT) and Professor David Gómez-Ullate (IE University)

Masters degree in theoretical physics. Complutense University of Madrid

Madrid, Spain

GPA: 9.2/10

2015 - 2016

- Thesis title: *Fraud Detection in Electronic Payments*.
- Thesis advisor: David Gómez-Ullate Oteiza (University of Cádiz & Complutense University of Madrid)

Bachelor degree in physics. University of Salamanca

Salamanca, Spain

GPA: 9.07/10

2011 - 2015

- Thesis title: *Resolution of the Nucleon-Nucleon scattering problem using the N/D method*
- Thesis advisor: David Rodríguez Entem (University of Salamanca)

Professional Experience

2022- **Ternure Track Assistant Professor**, CUNEF University, Madrid

2021- **Scientific Advisor**, Aitenea Biotech S.L.

2020-2022 **Postdoctoral Fellow**, Institute of Mathematical Sciences from the Spanish Research Council (ICMAT-CSIC)

2016-2020 **PhD Student**, Institute of Mathematical Sciences from the Spanish Research Council (ICMAT-CSIC)

2015 **Research Assistant**, Astrophysical Institute of the Canary Islands, Tenerife, Canary Islands, Spain

2014-2015 **Undergraduate Research Assistant**, Institute of Fundamental Physics and Mathematics, Salamanca, Spain

Research Stays

2023 Jan – **Middlebury College, Middlebury, Vermont USA**, Working with Prof. Becky Tang.
2023 Feb

Middlebury,
VT, USA

2022 Mar – **Texas State University, Austin, Texas, USA**, Working in project “Poisoning
2022 May Hidden-Markov-Model Inferences on Batch Data” with Prof. Tahir Ekin. Funded by *European Office of Aerospace Research and Development (EOARD)*.

Austin, TX, USA

2019 Aug – **Statistical and Applied Mathematical Sciences Institute (SAMSI) and Department of
2019 Dec Statistical Science, Duke University**, Working in research programs on Deep Learning and Games, Decisions, Risk and Reliability.

Durham, NC,
USA

2018 Aug – **Department of Statistical Science, Duke University**, Working with Prof. David L. Banks.
2018 Dec

Durham, NC,
USA

Publications

* *equal contribution*

PUBLISHED PAPERS

Adversarial Machine Learning: Bayesian Perspectives (2023). Ríos Insua, D.*, **Naveiro, R.***, Gallego, V.*, & Poulos, J. *Journal of the American Statistical Association*. <https://doi.org/10.1080/01621459.2023.2183129>

Augmented Probability Simulation Methods for Sequential Games (2023). Ekin, T., **Naveiro, R.***, Insua, D. R.*, & Torres-Barrán, A.* *European Journal of Operational Research*. <https://doi.org/10.1016/j.ejor.2022.06.042>

- Design of new dispersants using machine learning and visual analytics (2023). Jimena, M.*, **Naveiro, R.*** et. al. *Polymers*. <https://doi.org/10.3390/polym15051324>
- Deep learning for novel drug development (2023). **Naveiro, R.***, Martínez, M. J., Soto, A., Ponzoni, I., Ríos Insua, D. & Campillo, N. E. *Cheminformatics, QSAR and Machine Learning applications for Novel Drug Development*. Elsevier (To appear).
- Statistical Challenges in Automated Driving Systems (2023). Caballero, W.*, **Naveiro, R.***, & Ríos Insua, D.* *Applied Stochastic Models in Business and Industry*. <https://doi.org/10.1002/asmb.2765>
- Augmented probability simulation for adversarial risk analysis in general security games (2022). **Naveiro, R.**, Insua, D. R., & Camacho, J. M. *Defense and Homeland Security Simulation Workshop*. I3M. <https://www.cal-tek.eu/proceedings/i3m/2022/dhss/002/pdf.pdf>. **Best Paper Award**.
- Evaluation of female sexual health in routine gynaecological practice (2022). Fuentes, M. N., Villena, R. B., **Naveiro, R.**, Sánchez, M. H., Roca, L. C., & Parra, J. F. *Clínica e Investigación en Ginecología y Obstetricia*, 49(3), 100768. <https://doi.org/10.1016/j.gine.2022.100768>
- Managing Driving Modes in Automated Driving Systems (2022). Ríos Insua, D.*, Caballero, W.*, & **Naveiro, R.*** *Transportation Science*, 0(0). <https://doi.org/10.1287/trsc.2021.1110>
- Modeling Ethical and Operational Preferences in Automated Driving Systems (2022). Caballero, W., **Naveiro, R.** & Ríos Insua, D. *Decision Analysis*, 19(1):21–43. <https://doi.org/10.1287/deca.2021.0441>. **Finalist of the 2022 Clemen-Kleinmuntz Decision Analysis Best Paper Award**
- Towards Acceptance of Automated Driving Systems (2021). Jamson, S. L., Risvas, K., **Naveiro, R.**, et. al. *5th Int. Conf. on Computer-Human Interaction Research and Applications (CHIRA 2021)*, 232–239. <https://www.scitepress.org/Papers/2021/107213/107213.pdf>.
- Challenge 8: Smart Cybersecurity (2021). Arroyo Guardado, D., Brox Jiménez, P., Godoy, J. A., Villagra, J., Mueller, H., Gallego, V., Kosgodagan, A., **Naveiro, R.**, et. al. *White Papers. CSIC Scientific Challenges: Towards 2030*, vol. 11.
- Adversarial attacks against Bayesian forecasting dynamic models (2021). **Naveiro, R.** *22nd European Young Statisticians Meetings (EYSM 2021)*. <https://www.eysm2021.panteion.gr/publications.html>
- AI in drug development: a multidisciplinary perspective (2021). Gallego, V., **Naveiro, R.**, Roca, C. et al. *Molecular Diversity*, 25(3):1461–1479. <https://doi.org/10.1007/s11030-021-10266-8>
- Perspectives on Adversarial Classification (2020). Ríos Insua, D.*, **Naveiro, R.***, & Gallego, V.* *Mathematics*, 8(11):1957. <https://doi.org/10.3390/math8111957>
- Adversarial Risk Analysis (Overview) (2020). Banks, D.*, Gallego, V.*, **Naveiro, R.***, & Ríos Insua, D.* *WIREs Comput Stat*, e1530, 1–16. <https://doi.org/10.1002/wics.1530>
- Hydroxicloroquine for pre-exposure prophylaxis for SARS-CoV-2 (2020). Lopez de la Iglesia, J., Cubelos, N., **Naveiro, R.**, et. al. *Current Trends in Medicine*, 2(1):9–18. <https://doi.org/10.47726/ctm.1003>
- Adversarial Classification: An adversarial Risk Analysis approach (2019). **Naveiro, R.**, Redondo, A., Insua, D. R., & Ruggeri, F. *International Journal of Approximate Reasoning*, 113: 133–148. <https://doi.org/10.1016/j.ijar.2019.07.003>
- Large Scale Automated Forecasting for Monitoring Network Safety and Security (2019). **Naveiro, R.**, Rodríguez, S., & Ríos Insua, D. *Applied Stochastic Models in Business and Industry*, 35: 431–447. <https://doi.org/10.1002/asmb.2436>
- Gradient Methods for Solving Stackelberg Games (2019). **Naveiro, R.**, & Ríos Insua, D. In: Pekeč S., Venable K.B. (eds) *Algorithmic Decision Theory. Lecture Notes in Computer Science*, 11834: 126–140. Springer, Cham.
- Reinforcement Learning under Threats. (2019). Gallego, V., **Naveiro, R.**, & Ríos Insua, D. *Proceedings of the AAAI Conference on Artificial Intelligence*, 33(01): 9939–9940. <https://doi.org/10.1609/aaai.v33i01.33019939>

PUBLISHED BOOKS

¿Qué sabemos de Análisis de Riesgos? (2022). Ríos Insua D. & **Naveiro R.** *CSIC-La Catarata*. ISBN: 978-84-1352-458-0.

UNDER REVIEW

Adversarial Risk Analysis for Heterogeneous Traffic Management (2022). Caballero, W.*, **Naveiro, R.*** & Ríos Insua, D.

Poisoning Hidden-Markov-Model Inferences on Batch Data (2022). Camacho, J. M.*, Caballero, W.*, Ekin, T., & **Naveiro, R.***

Protecting Classifiers from Attacks. A Bayesian Approach (2021). Gallego, V.*, **Naveiro, R.***, Ríos Insua, D.*, & Ruggeri, F. *arXiv preprint arXiv:2004.08705*.

Data Sharing Games (2020). Gallego, V.*, **Naveiro, R.***, Ríos Insua, D.*, & Rozas W. *arXiv preprint arXiv:2101.10721*.

Opponent Aware Reinforcement Learning (2019). Gallego, V., **Naveiro, R.**, & Ríos Insua, D. *arXiv preprint arXiv:1809.01560*.

Research and Transference Projects

AS PRINCIPAL INVESTIGATOR

Jan 2023 – Jul 2023	Development and identification of new MILLAD-type clarifying molecules. , Industrial Partners: Altenea Biotech and Repsol.	5,000 €
Jun 2022 – Nov 2022	TECA Project. , Industrial Partner: DISID CORPORATION.	21,945.6 €
Oct 2021 – Feb 2022	Unit risk modeling and risk accumulation derived from cybersecurity for the development of version 4 of the DeRISK product. , Industrial Partner: DENEXUS TECH, S.L.	37,382 €
Jan 2021 – Dec 2021	Machine Learning for dispersants discovery. , Industrial Partners: Altenea Biotech and Repsol.	10,000 €
Mar 2021 – Oct 2021	Adversarial Risk Analysis for competitive decision making. , Industrial Partners: EVERIS Spain SLU y CaixaBank.	60,000 €

AS INVESTIGATOR

Jan 2023 – Dec 2025	A new paradigm for Adversarial Machine Learning. , Funding Entity: MICINN. Spanish Ministry of Science, Innovation and Universities.	62,000 €
Sep 2021 – Aug 2023	Robust Command and Control under Adversarially Perturbed Data. Acronym: RC2APD. , Funding Entity: EOARD. Reference: 13324227.	58.700 \$
Jul 2021 – Jul 2023	Hardening JADC2 to Adversarial Data: Theory, Algorithms and Applications. , Funding Entity: Air Force Office of Scientific Research (AFOSR).	260.000 \$
Apr 2020 – Apr 2022	Adversarial Machine Learning: Methods, Computations and Applications to Malware, Fake News and Autonomous Vehicles. , Funding Entity: BBVA Foundation.	100,000 €
May 2019 – Jul 2022	TRUSTONOMY. Building acceptance and trust in autonomous mobility. , Program: Horizon 2020: Smart, Green and Integrated Transport. Ref: 815003. European Commission.	3,920,000 €
Sep 2019 – Sep 2021	Content Recommender Based on a User's Digital Profile. , Industrial Partner: XEERPA MARKETING SOLUTIONS, SL.	90,750 €
Jan 2018 – Dec 2021	Advances in Risk Analysis for Security. , Funding Entity: MICINN. Spanish Ministry of Science, Innovation and Universities. Reference: MTM2017-86875-C3-1-R.	32,186 €
Oct 2018 – Dec 2018	Innovative platform for Proximity Marketing and Payments at the Point of Sale, based on Bluetooth LE technology, which communicates with the user in a personalized way, in real time, in the right moment of the purchase decision and in the right place. , Industrial Partner: SIEM, Software & Security Services, SL.	30,000 €
May 2017 – Apr 2019	Explora JUDIES: Stochastic Differential Games: Breaking Fifty Years of the Paradigm. , Funding Entity: MICINN. Spanish Ministry of Science, Innovation and Universities. Reference: MTM2015-72907-EXP.	25,000 €
Jan 2017 – Jul 2017	Cyber-risks evaluation. , Industrial Partner: LEAP IN VALUE, SL.	31,127.25 €
Sep 2014 – Aug 2022	Adversarial Risk Analysis. , Funding Entity: AXA RESEARCH FUND.	1,176,000 €

Awards, Fellowships, & Grants

- 2023 **Finalist of the 2022 Clemen–Kleinmuntz Decision Analysis Best Paper Award. Paper: Modeling Ethical and Operational Preferences in Automated Driving Systems**, INFORMS
- 2022 **Award for best doctoral thesis on basic research in artificial intelligence**, AIHUB from the Spanish National Research Council
- 2022 **Best paper award. Paper: Augmented probability simulation for adversarial risk analysis in general security games.**, Int. Defense and Homeland Security Simulation Workshop
- 2019 **Funding for research stay at the SAMSI and Department of Statistical Science, Duke University, Durham, NC, USA.**, SAMSI and NSF
- 2018 **Funding for short term research scholarship for a research stay at Duke University, Durham, North Carolina, USA.**, Spanish Ministry of Education
- 2016 **FPU scholarship for PhD studies.**, Spanish Ministry of Education
- 2015 **Research scholarship for a research stay at the Astrophysical Institute of the Canary Island, Tenerife, Spain.**, Astrophysical Institute of the Canary Island
- 2014 **Research scholarship for a research stay at the Institute of Fundamental Physics and Mathematics, Salamanca, Spain.**, Spanish Ministry of Education

Presentations

INVITED TALKS

- May 25th 2023 7th Games and Decisions in Risk and Reliability *Simulation based Bayesian Optimization*. Royal Academy of Sciences, Madrid, Spain.
- March 18th 2023 *Simulation based Bayesian Optimization*. Artificial Intelligence Research Institute - Spanish National Research Council (IIIA-CSIC), Barcelona, Spain.
- July 6th 2022 EURO Conference. *Scalable methods for solving games in Adversarial Machine Learning*. Helsinki, Finland.
- June 24th 2022 Advances in Decision Analysis Conference. *Decision Analytic Support in Non-Cooperative Sequential Games*. Arlington, Virginia, USA.
- June 9th 2022 Spanish Society of Statistics and Operations Research National Congress. *An application of Bayesian methods in materials discovery*. Granada, Spain.
- Abril 25th 2022 Young Online Seminar Series Machine Learning NeEDS Mathematical Optimization. *Adversarial attacks against Bayesian dynamic forecasting systems*.
- Marzo 31st 2022 Texas State University. *Adversarial Machine Learning*. Texas State University, San Marco, Texas, USA.
- March 22nd 2022 Workshop: The Mathematics of Living Matter. Life-Hub CSIC. *Machine Learning for Molecular Design*. ICMAT-CSIC. Madrid, Spain.
- January 22nd 2022 Indoamérica Technological University. *Adversarial Machine Learning: Bayesian perspectives*. Indoamérica Technological University, Quito, Ecuador.
- November 1st 2021 IMI-DSC Conference: Decision, Optimization and Data Science. *Adversarial Machine Learning: a probabilistic approach*. Complutense University of Madrid. Madrid, España.
- September 7th 2021 22nd European Young Statisticians Meeting EYSM 2021. *Adversarial attacks against Bayesian forecasting dynamic models*. Bernoulli Society for Mathematical Statistics and Probability. Athens, Greece.
- July 7th 2021 WEBINAR: Applications of AI in the discovery of intelligent materials and in the improvement of processes in the chemical industry. *Artificial Intelligence in Lubricant Design*. PET MSO-ED, SusChem-España y Materplat.
- May 28th 2021 Twelfth Workshop on Bayesian Inference in Stochastic Processes. *Bayesian forecasting dynamic models under attacks*. Discussant: Professor Mike West. CNR-IMATI, Milano, Italia.
- November 1st 2019 Institute for Integrating Statistics in Decision Sciences. Dept. of Decision Sciences. George Washington University. *Security Games in the New Paradigm: Solution Techniques*. GWU, Washington D.C., USA.

June 13th 2019 Eleventh Workshop on Bayesian Inference in Stochastic Processes. *Reinforcement Learning Under Threats*. Royal Academy of Sciences, Madrid, España.

CONTRIBUTED PRESENTATIONS

November 10th 2021 New Bridges between Mathematics and Data Science. *Augmented probability simulation for optimization in adversarial machine learning*. Spanish Network of Industrial Mathematics (Math-In) and University of Valladolid. Valladolid, España.

September 2nd 2021 4th International Congress on Transportation Research ICTR 2021. *Towards ethical decision support in automated driving systems*. Hellenic Institute of Transportation Engineers. Rhodes, Greece.

July 14th 2021 63rd ISI World Statistics Congress, *Managing driving modes in Automated Driving Systems*. International Statistical Institute (ISI).

June 9th 2021 2021 Workshop of the Spanish Society of Statistics and Operations Research *Protecting Classifiers From Attacks*.

October 26th 2019 Algorithmic Decision Theory. *Gradient Methods for Solving Stackelberg Games*. Duke Fuqua School of Business. Duke University, Durham, NC, USA.

August 6th 2019 Games, Decisions, Risk and Reliability Opening Workshop. *Augmented Probability Simulation Methods for Non-cooperative Games* (poster). Statistical and Applied Mathematical Sciences Institute. NC State University, Raleigh, NC, USA.

30 Julio 2019 Second Conference on Risk Analysis in the Digital Era. *Augmented Probability Simulation Methods for Non-cooperative Games* (poster). Society for Risk Analysis. University at Buffalo. Buffalo, NY, USA. Spanish Society of Statistics and Operations Research

30 Mayo 2018 XXXVII Spanish Society of Statistics and Operations Research National Congress. *Adversarial Classification: An Adversarial Risk Analysis approach*. SEIO. Oviedo, Spain.

November 14th 2017 1st Spanish Young Statisticians and Operational Researchers Meeting (SYSORM). *Adversarial Classification: An Adversarial Risk Analysis approach*. Spanish Society of Statistics and Operations Research y University of Granada. Granada, Spain.

June 14th 2017 Bayesian Inference in Stochastic Processes (BISP10). *Monitoring for anomalous behaviour in massive traffic time series*. Bocconi University and International Society for Bayesian Analysis (ISBA). Milano, Italy.

June 8th 2017 Games and Decisions in Risk and Reliability Conference (GDRR). *Fraud detection in electronic payments*. Royal Academy of Sciences. Madrid, Spain.

October 27th 2016 Mathematical Solutions for Industry: Success Stories and perspectives. *Random Forest Algorithm in Fraud Detection* (poster). Institute of Mathematical Sciences (ICMAT-CSIC) y Spanish Network of Industrial Mathematics (Math-In). Madrid, Spain.

Teaching Experience

Fall 2022	Data Analysis for second year undergraduates students of the degree on Economics (60h) , Lecturer. Lecture notes at: https://roinaveiro.github.io/CU-analisis-datos/	CUNEF University
Fall 2022	Introduction to Statistics for first year undergraduates students of the degree on Mathematical Engineer (60h) , Lecturer.	CUNEF University
2021 Jun – 2021 Jul	Course on Bayesian Methods in Artificial Intelligence for last year undergraduate students and master students (10h) , Lecturer. Lecture notes at: https://roinaveiro.github.io/curso-Bayes-JAE/	ICMAT-CSIC, Madrid, Spain
2021 Jun – 2021 Jul	Course on Machine learning: Foundations, Computations and Applications for last year undergraduate students and master students (10h) , Lecturer. Lecture notes at: https://roinaveiro.github.io/curso-ml-JAE/	ICMAT-CSIC, Madrid, Spain
Fall 2020	Probability for undergraduate students in the second year of the degree in Mathematics (15h) , Teaching Assistant	Complutense University

Spring 2019 and 2020	Applications of Stochastic Processes for undergraduate students in the last year of the degree in Mathematics (60h) , Lecturer. Lecture notes available at: https://roinaveiro.github.io/files/apres.pdf	Complutense University
Spring 2019	Machine Learning with R targeted to researchers from the Instituto Nacional de Estadística (National Statistical Institute) (15h) , Lecture notes at: https://github.com/roinaveiro/curso-ml-R	INE, Madrid, Spain
Spring 2018	XII Modelling Week for master students of the Master in Mathematical Engineering (30h) , Teaching assistant	Complutense University

Thesis Supervised

PHD THESIS SUPERVISED

2021-	José Manuel Camacho , PhD Student	ICMAT-CSIC, Madrid, Spain
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MASTERS AND UNDERGRADUATE THESIS SUPERVISED

2022-	Gustavo Rodríguez Rodríguez , MSc on Statistical and Computational Treatment of Information. Awarded with JAE Intro scholarship by the National Research Council.	Complutense University
2021-2022	Eduardo Arrabal López , Undergraduate student on Mathematics. Thesis title: Models for conflict management in heterogeneous traffic situations.	Complutense University
2020-2021	Montserrat Muñoz , MSc on Statistical and Computational Treatment of Information. Thesis title: Latent Dirichlet Allocation Models to characterize users in social networks.	Complutense University

Dissemination Activities

Talk entitled: "Traversing the chemical space: statistics and machine learning applied to molecular desing (2023). Invited by the *Facultad de Estadística of Universidad Complutense de Madrid*.

Podcast on Risk Analysis with the Spanish National Research Council (2022). Available at: www.ivoox.com/en/analisis-riesgos-roi-naveiro-audios-mp3_rf_99841809_1.html

The mathematics behind automated driving systems (2022). Ríos Insua, D., & **Naveiro, R.** Journal of the Spanish Royal Academy of Sciences (RACSAM). To appear.

Inteligencia Artificial ¿Rompiendo Barreras! (2022). Invited speaker in a session organized by the *Ciencia con Tres Encantos* association.

Artificial Intelligence in Finance (2022). Invited speaker in a roundtable discussion organized by *Banco de España*.

Presentation of the book: ¿Qué sabemos de Análisis de Riesgos?. (2022). Madrid Book Fair.

Coches autónomos, ética y matemáticas (2021). Talk given in the Spanish Royal Academy of Sciences.

Las matemáticas de las máquinas morales (2021). Ríos Insua, D., & **Naveiro, R.** Article in *Café y Teoremas* section of El País (Spanish main newspaper). www.elpais.com/ciencia/cafe-y-teoremas/2021-11-26/las-matematicas-de-las-maquinas-morales.html

Que no te den gato por liebre... ¿o sí? (2019). Gallego, V., Gordo, D. & **Naveiro, R.** Article in *Café y Teoremas* section of El País (Spanish main newspaper). www.elpais.com/elpais/2019/05/29/ciencia/1559146396_616900.html

¿Cómo se ha convertido Matemáticas en la carrera universitaria más popular? (2018). Capel, A., Ocariz, J., **Naveiro, R.**, Contreras, P. Article in *Café y Teoremas* section of El País (Spanish main newspaper). https://elpais.com/elpais/2018/06/25/ciencia/1529923839_750611.html?rel=mas

Outreach & Professional Development

ORGANIZED CONFERENCES

November 3rd 2021 – November 5th 2021. PhD Day organizer at the 7th International Conference on Algorithmic Decision Theory. University of Toulouse 1 Capitole. <https://www.irit.fr/ADT2021/>. Toulouse, France.

June 12th 2019 – June 14th 2019. 11th Workshop on Bayesian Inference in Stochastic Processes. Royal Academy of Sciences, Madrid, Spain.

May 20th 2019 – May 24th 2019. 2nd BYMAT Conference. Institute of Mathematical Sciences ICMAT-CSIC. *BYMAT Network and BBVA Foundation*. <https://www.icmat.es/congresos/2019/BYMAT/>. Madrid, Spain.

May 7th 2018 – May 9th 2018. Co-Founder of 1st BYMAT Conference: Bringing Young Mathematicians Together. ICMAT-CSIC. *BYMAT Network and BBVA Foundation*. Madrid, Spain. <https://www.icmat.es/congresos/2018/BYMAT/>

June 7th 2017 – June 9th 2017. 5th symposium on Games and Decisions in Reliability and Risk. Royal Academy of Sciences. Madrid. Spain.

STUDY GROUPS WITH INDUSTRY

May 15th 2017 – May 19th 2017. European Study Group with Industry: *ESGI 131*. Challenge: *Big Data in Sports: Predictive Models for Basketball Player's Performance*. Basque Centre for Applied Mathematics (BCAM) and Math-In. Bilbao, Spain.

Technical skills

Programming languages: Python, R and Bash.

Machine Learning frameworks: PyTorch, PyTorch Geometric, GPyTorch, TensorFlow, TensorFlow Probability, GPFlow, Graph Nets.

Scripting and markup languages: R Markdown, Quarto, LaTeX and Microsoft Office.

Operating systems: Advanced experience with most flavours of Linux and MacOS.

Databases: MongoDB.