James A. Grant

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Employment

Jan 2021–present	Lecturer in Statistics, Dept. Maths and Stats, Lancaster University, UK
May 2020–Dec 2020	Senior Research Associate, Dept. Maths and Stats, Lancaster University, UK
Aug 2019–Apr 2020	Impact Research Associate, STOR-i CDT, Lancaster University, UK
Jun 2018–Jan 2019	Machine Learning Research Student, Secondmind.ai, Cambridge, UK
Jun 2017–Aug 2017	Data Science Intern (Recommender Systems), Lancaster University, UK
Oct 2015–Jun 2019	Graduate Teaching Assistant, Lancaster University, UK

Education

Oct 2015–Jul 2019	PhD in Statistics and Operations Research. Lancaster University
Oct 2014–Sep 2015	MRes Statistics and Operations Research, with Distinction. Lancaster University
Sep 2013–Sep 2014	MRes Advanced Statistics, with Distinction. University of Glasgow
Sep 2009–Jun 2013	BSc Hons Statistical Modelling, 1st class. Heriot-Watt University, Edinburgh
Oct 2021–Jun 2023	PGCert in Academic Practice. Lancaster University

Research

I research methods for sequential decision making under uncertainty, particularly in settings with challenging data, limited feedback, and a requirement to interface algorithmic decision making with humans or other data science tools. This work is inspired by a number of ongoing collaborations with industrial partners interested in challenges such as anomaly detection, robust pricing, adaptive simulation, and human-AI teaming.

My doctoral research focussed on variants of bandit problems where point process data is observed as feedback. This research has proposed effective order-optimal algorithms for such problems and theoretical guarantees via state-of-the-art multi-armed bandit and Bayesian non-parametric theory.

Refereed Publications

Arabzadeh, A., Grant, J.A., Leslie, D.S. (2024) Federated $\mathcal{X}$-armed Bandit with Flexible Personalisation. *Transactions on Machine Learning Research*.

Aliatimis, G., Yoshida, R., Boyaci, B., Grant, J.A. (2024) Tropical Logistic Regression Model on the Space of Phylogenetic Trees. *Bulletin of Mathemtical Biology*.

He, C., Leslie, D.S., Grant, J.A. (2024) Online Detection and Fuzzy Clustering of Anomalies in Non-stationary Time Series. *Signals*.

Grant, J.A., Leslie, D.S., (2023) Learning to Rank under Multinomial Logit Choice. *Journal of Machine Learning Research*.

Gibbons, C., Grant, J.A., Szechtman, R. (2023) Sequential Simulation Optimization with Censoring: An Application to Bike Sharing Systems. *To Appear in Proceedings of Winter Simulation Conference*.

Grant, J.A., Szechtman, R., (2021) Filtered Poisson Process Bandit on a Continuum. *European Journal of Operational Research*.

Grant, J.A., Leslie, D.S., (2020). On Thompson Sampling for Smoother-than-Lipschitz Bandits. *In Proceedings of International Conference on Artificial Intelligence and Statistics*. PMLR. [**Notable Paper Award Winner**]

Grant, J.A., Leslie, D.S., Glazebrook, K., Szechtman, R., Letchford, A.N. (2020)., Adaptive Policies for Perimeter Surveillance Problems. *European Journal of Operational Research*.

Grant, J.A., Boukouvalas, A., Griffiths, R., Leslie, D.S., Vakili, S., Munoz de Cote, E., (2019). Adaptive Sensor Placement for Continuous Spaces. *In Proceedings of International Conference on Machine Learning*. ACM.

Preprints in Submission

Grant, J.A., Leslie, D.S. Apple Tasting Revisted: Bayesian Approaches for Partially Monitored Online Binary Classification. *arXiv:2109.14412*

Working Papers

Sequential Simulation Optimization of Bike Sharing Systems with Censored Data, with R. Szechtman.

Notable Funding

£148,403, PI "Integrating Multi-Armed Bandits with Triggers from Online Analytics" i-CASE Studentship, EPSRC and BT (2023).

Teaching

Lecturer on the following modules

- MATH330 Likelihood Inference [Final Year UG Maths + Stats] (2022-2024)
- MATH333 Statistical Models [Final Year UG Maths + Stats] (2021-2022)
- MATH504 Statistical Learning [M level Stats/Data Science] (2021)
- MATH452 Generalised Linear Models [M level Stats/Data Science] (2021)
- CFAS420 Statistical Learning [M level Data Science] (2021)
- STOR608 Contemporary Topics in Statistics and Operational Research [M level Stats + OR] (2020-2023,Guest Lecturer)

Graduate Teaching Assistant 2015-19 - lead tutorials in 2^{nd} year Probability and Statistics, 3^{rd} year Medical Statistics, 1^{st} year core Mathematics modules, and introductory Statistics and Data Analysis for 1^{st} and 2^{nd} year Business majors.

Supervision

Soheil Arabzadeh, PhD Student, 2020–2025, co-supervised with D.Leslie.

George Aliatimis, PhD Student, 2022–present, co-supervised with B. Boyaci and R. Yoshida (NPS).

Theo Crookes, PhD Student, 2023–present, co-supervised with I. Eckley, and **BT**.

Robert Lambert, PhD Student 2023–present, co-supervised with R. Shone and R. Szechtman (NPS).

Adam Page, PhD Student, 2023–present, co-supervised with A. Sachs, C Kirkbride, and **Datasparq**.

Harry Newton, PhD Student 2024–present, co-supervised with L. Rhodes-Leader, D. Leslie, and **Tesco**.

Changjiang He, Senior Research Associate, 2021–2022, co-supervised with D. Leslie.

Supervision of 4x Data Science MSc Dissertation Projects since 2021 in collaboration with industry.

Co-supervision of 2x Naval Postgraduate School MSc Dissertations 2020-21, with R. Szechtman.

Administrative Responsibilities

EDI Lead for Prob_AI Hub (2024–), EDI Lead for School of Mathematical Sciences (2025), Knowledge Exchange Champion (2022–),

Co-Programme Director MSc Data Science (2022–2024), Statistics Seminar Organiser (2021–2022), Chair of Departmental Computing Committee (2021–2022)

Professional Activities

Member of EDI Advisory Board of the Royal Statistical Society (2023–2027),

Associate Editor, ACM Transactions on Probabilistic Machine Learning (2023–)

Committee Member of Young Statisticians' Section (2023–2024), Celebrating Diversity Special Interest Group (2024–) of the Royal Statistical Society

Chair of Royal Statistical Society Lancashire and East Cumbria Local Group (Feb 2017–Sep 2018).

Reviewer for AISTATS, ICLR, ICML, NeurIPS, Journal of Machine Learning Research, European Journal of Operational Research; Artificial Intelligence journal; Notices of American Mathematical Society; IEEE Transactions on Knowledge and Data Engineering, Transactions on Machine Learning.

Miscellaneous

Notable Presentations

Keynote presentation (Schibsted RecSys Workshop Oslo, 2023), Netacea invited talk (Online, 2023),

RSS Conference contributed talk (Aberdeen, 2022), EcoSta conference invited talk (Online, 2022),

Statistics and Operational Research Departmental Seminar (Cardiff, 2022),

Tommy Flowers Network invited talk (Online, 2021), Peak.ai Ensemble invited talk (Online, 2021),

Data Science Institute Lancaster Seminar (Online, 2021)

Naval Postgraduate School OR Department Seminar (Online, 2020),

AISTATS contributed talk (Online, 2020), ICML contributed talk (Long Beach, CA, 2019),

IMA OR Society Maths of OR Conference invited talk (Birmingham, 2019 and 2017),

Secondmind.ai seminar (Cambridge, 2019), StochMod contributed talk, (Lancaster 2018),

STOR-i Annual Conference invited talk (Lancaster, 2017)

Prizes

Notable Paper Award - AISTATS 2020 (with David Leslie),

Best Poster Presentation Prize - STOR-i Annual Conference, Lancaster University, Jan 2016,

Best M Level Thesis - Department of Statistics, University of Glasgow, Oct 2014