

*Tom Cunningham*

tom.cunningham@gmail.com, 617 834 0413

LinkedIn, Twitter, Website, Google Scholar.

### **Background.**

I worked as one of the most senior data scientists at both Meta and Twitter, consulting on a wide range of issues. Since resigning from Twitter in November 2022 I have been working on a variety of personal projects related to content moderation (1, 2) and academic work on cognition and decision-making (3). I am planning to move into work related to generative AI, especially related to my prior work on tech company strategy, content moderation, and academic work on cognition and decision-making.

### **Areas of interest/expertise.**

1. **Content moderation.** I have worked across the spectrum on content moderation: policy, classifiers, ranking, experimentation, and formulating tradeoffs. I was quoted extensively in the report of the Congressional investigation into the Jan 6 riot. In 2023 I have published notes about how platforms make tradeoffs, and patterns in suspension of prominent users.
2. **Experimentation.** I worked extensively on experiment design and interpretation at both Meta and Twitter. After inventing and applying new methods for more accurately estimating experiment effects at Meta I wrote a paper with Dominic Coey. I also wrote a paper with Josh Kim discussing a wide variety of issues related to experiments with multiple outcomes, including interpreting surrogacy effects and composite metrics.
3. **Network effects.** I began the use of matrix models at Meta to characterize situations involving network effects. I have dealt with many different sources of evidence for estimating network effects (launch effects; cluster experiments; pretests compared with backtests; downstream effects; country tests; content experiments; jigsaw experiments), and I have written internal survey articles on how to evaluate each. I also have worked on how to deal with nonlinear network effects (AKA tipping points).
4. **Business models and strategy.** I worked on a number of strategic issues: cannibalization between platforms, anti-trust issues, modeling spillovers between different sides of a platform, evaluating incentives for creators, and evaluating subscription and premium charges. I recently wrote a Twitter thread with some generalizations about social media business models.
5. **Advertiser behavior.** I have worked extensively on understanding and modeling advertiser behaviour and using those models to evaluate counterfactuals, e.g. the equilibrium effect of changes in targeting signals, changes in auction



design, changes in ad-load, and changes on a competitor's platforms.

6. **Cognition and decision-making.** My primary academic interest has been how the structure of human cognition is reflected in economic decision-making. I have a paper under review at the AER on how to detect the influence of unconscious or un-acknowledged influences on decisions. More background is in a blog post.

### **Employment.**

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2021-2022	Twitter, Senior Staff Data Scientist
2015-2020	Meta/Facebook, Research Scientist
2014-2015	Caltech, Visiting Associate, Economics Dept
2013-2015	Institute for International Economic Studies, Stockholm, Assistant Professor
2012-2013	Tel Aviv University, Postdoctoral Researcher
2011-2012	Harvard University, College Fellow (Postdoctoral Fellow)
2007-2007	Zoopla, Consultant (House price prediction)
2006-2007	Europe Economics, Analyst
2003-2005	LOVEFILM, Programmer, Manager & Analyst
1999-2003	Equillia (now Outreach), Programmer & Manager (CRM software)

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### **Education.**

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2009-2011	Harvard University, Visiting Fellow, Economics Department
2006-2012	London School of Economics (LSE), MRes/PhD in Economics
2005-2006	London School of Economics (LSE), MSc in Economics & Philosophy
2004-2005	Birkbeck University, Postgraduate Certificate in Economics & Mathematical Economics
1995-1998	Otago University, Dunedin, New Zealand BA (Honours) Philosophy

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### **Talks.**

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2022	California Econometrics Conference, Bay Area Behavioral Economics Workshop, Netflix, Conference on Digital Experimentation (CODE), Meta Data Science.
2019	Conference on Digital Experimentation (CODE), World Wide Web (WWW).
2016	Harvard Economics Seminar, Princeton Economics Seminar

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### **Other activities.**

- Co-organizer of the Bay Area Tech-Economics Seminar Series.

#### **Publications.**

- 2019: **Improving Treatment Effect Estimators Through Experiment Splitting**, *WWW*, with Dominic Coey.
- 2013: **The Incumbency Effects of Signalling** *Economica*, with Ines Moreno de Barreda, Francesco Caselli, and Massimo Morelli.
- 2009: **Leader Behaviour and the Natural Resource Curse** *Oxford Economic Papers*, with Francesco Caselli.

#### **Working Papers.**

- 2023: **Implicit Preferences**, *Revise and Resubmit, American Economic Review*, with Jon de Quidt.
- 2020: **Interpreting Experiments with Multiple Outcomes** (presented at CODE) with Josh Kim.
- 2015: **Biases and Implicit Knowledge**
- 2013: **Comparisons and Choice**