

EDUCATION

- Ph.D. Machine Learning, Stanford University** GPA 4.0/4.0
Department of Management Science & Engineering, Ph.D. Minor in Statistics *Sep 2012 – Jun 2016*
- **Dissertation:** [Deep Exploration via Randomized Value Functions](#)
 - **Advisor:** Benjamin Van Roy **Committee:** John Duchi, Ramesh Johari, Mykel Kochenderfer, Percy Liang
 - **Awards:** Stanford Graduate Fellowship, Dantzig dissertation runner up (INFORMS national best Ph.D.).
- Masters of Mathematics, Oxford University** First class
Graduated 1st of over 200 students in final examinations. Winner of the Gibbs prize. *Sep 2010 – Jun 2011*
- BA Hons Mathematics, Oxford University** First class
Graduated 1st in Applied Maths. Winner of Junior Maths, IMA and Jane Thornton prizes. *Sep 2007 – Jun 2010*

WORK EXPERIENCE

- OpenAI** San Francisco
Member of technical staff, Manager: Liam Fedus *Sep 2023 – present*
Product-focused research and development. Efficient exploration and effective uncertainty estimates for ChatGPT.
- DeepMind** London, San Francisco
Senior Staff Research Scientist, Manager: Benjamin Van Roy *Jul 2021 – Jun 2023*
Rethinking uncertainty in deep learning with ENNs. Demonstration of ‘efficient agent’ IP with LLM agents.
- Staff Research Scientist, Manager: Benjamin Van Roy* *Dec 2019 – Jul 2021*
Found and lead new research team around ‘efficient agent’ agenda with former Ph.D. advisor.
- Senior Research Scientist, Manager: David Silver* *Jun 2017 – Dec 2019*
Ambitious, real-world projects in AI and decision making. Develop scalable approaches for efficient exploration
- Research Scientist, Manager: Daan Wierstra* *Jan 2015 – Jun 2017*
Deep Exploration via Bootstrapped DQN. Algorithms behind DeepMind AI data centre cooling.
- Google** Mountain View
Data science intern in Ads Metrics. Targeted shopping ads and long-term user effects. *Jun 2014 – Sep 2014*
- JPMorgan Chase** London, New York
Intern then analyst for credit derivatives trading and strategy. Quant and fundamental research. *Jun 2010 – Sep 2012*

SELECTED PAPERS ([GOOGLE SCHOLAR](#))

- **Epistemic Neural Networks** NeurIPS 2023 Spotlight
Scalable uncertainty in deep learning. Better performance than an ensemble of size=100 at cost <2 particles.
- **Deep Exploration via Randomized Value Functions** JMLR 2019
Computationally tractable approaches to statistically efficient reinforcement learning at scale.
- **The Neural Testbed: Evaluating Joint Predictions** NeurIPS 2022 Spotlight
Benchmark for the prediction quality of approximate posterior inference in deep learning.
- **Behaviour Suite for Reinforcement Learning** ICLR 2020 Spotlight
Methodical benchmark for the scaling properties of RL algorithms, with open source code.
- **A Tutorial on Thompson Sampling** Foundations and Trends in ML 2020
A thoughtful tutorial around Thompson sampling to balance exploration with exploitation.
- **Reinforcement Learning, Bit by Bit** Foundations and Trends in ML 2023
An elegant perspective on reinforcement learning through the lens of information theory.

OTHER

- **Captain of Swimming, Oxford University:** Full blues 2008-10. Three university records. National champs.
- **Captain of Graduate Rugby, Stanford University:** Lead MBA team to national champs. Olympic club squad.
- **Cross-Chanel Relay Swim, Eton College:** Youngest winning swimmer (14) and subject of BBC documentary.
- **Core skills:** clear thinking, determination, effective communication, leadership, teamwork, and fun.