OLIVIER JEUNEN

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PROFESSIONAL EXPERIENCE

ShareChat December 2022 – Present
Lead Applied Scientist *Edinburgh, United Kingdom*
Research centred around recommendation, measurement, experimentation, and optimisation.

Amazon December 2021 – November 2022
Postdoctoral Scientist *Edinburgh, United Kingdom*
"Early-Career Scientist" Programme, researching machine learning and causal inference in advertising.

Spotify June 2021 – August 2021
Research Scientist Intern *London, United Kingdom*
Research centred around the intersection of causal inference and machine learning.

Facebook (Meta) September 2020 – November 2020
Research Engineer Intern *London, United Kingdom*
Research centred around uncertainty estimation for causal models in computational advertising.

Criteo AI Lab June 2019 – September 2019
Research Scientist Intern *Paris, France*
Research centred around applications of counterfactual inference for recommender systems.

University of Antwerp October 2017 – November 2021
(Pre-/Post-)Doctoral Research Scientist *Antwerp, Belgium*
Research focused on implicit-feedback recommender systems and their evaluation in the Adrem Data Lab.

Froomle *(University of Antwerp spin-off)* August 2017
Data Scientist *Antwerp, Belgium*
Back-end development for a real-time recommendation architecture.

PrediCube *(University of Antwerp spin-off)* July 2016 – June 2017
Data Scientist & Research Intern *Antwerp, Belgium*
Research on distributed learning for computational advertising.

Technicolor September 2015 – June 2017
Data Scientist & Research Intern *Antwerp, Belgium*
Research internships, student jobs and M.Sc. thesis focused on machine learning applications with IoT data.

EDUCATION

University of Antwerp, Belgium

Ph.D. in Computer Science	Thesis: *Offline Approaches to Recommendation with Online Success*		*2017 – 2021*
M.Sc. in Computer Science	Minor: Data Science & Research	*Magna cum laude*	*2015 – 2017*
B.Sc. in Computer Science		*Cum laude*	*2012 – 2016*
Erasmus exchange semester	**University of Edinburgh, United Kingdom**		*Jan.–June 2015*
High School: Moretus, Belgium	Latin–Mathematics (option extra mathematics)		*2006 – 2012*

TECHNICAL SKILLS & RESEARCH INTERESTS

Programming	C, C++, Java, Python, SQL
Frameworks	Apache Hive, Numpy, Pandas, PyTorch, Scipy, Scikit-Learn, Apache Spark, Tensorflow
Research Focus	Causality, contextual bandits, information retrieval, machine learning, recommender systems
Languages Spoken	English, Dutch, French (basic)

HONOURS, AWARDS & ACHIEVEMENTS

AdKDD workshop at KDD '22	Best Paper Award
RecSys '21, '22, '23	Three consecutive Outstanding Reviewer Awards
RecSys '21	Best Student Paper Award
WWW '21	Student Scholarship Award
RecSys '19	SIGCHI Travel Grant
Criteo's RecoGym Challenge 2020	Led a team of MSc students to 1st place

(INVITED) TALKS, KEYNOTES & GUEST LECTURES

Jan. '24	**Pessimistic Decision-Making for Recommender Systems**	Meta, USA, Online
Dec. '23	*Invited Panel Discussion*	DBWRS '23, BE
Dec. '23	**Pessimistic Decision-Making for Recommender Systems**	DBWRS '23, BE
Aug. '23	**Off-Policy Learning to Bid with AuctionGym**	Tubi, USA, Online
July '23	**Pessimistic Decision-Making for Recommender Systems**	University of Glasgow, UK
Apr. '23	**Probabilistic Position Bias Models for Short-Video Recommendations**	ECIR '23 Industry Day, IE
Oct. '22	**Learning to Bid with AuctionGym**	Indeed, USA, Online
June '22	**Pessimistic Decision-Making for Recommendation**	PRS Workshop, Netflix, CA, USA
Apr. '22	**Machine Learning Challenges in Advertising at Amazon**	*Guest Lecture* at University of Antwerp, BE
Apr. '22	**Advances in Bandit Learning for Recommendation**	Booking.com, NL, Online
Feb. '22	**Embarrassingly Shallow Auto-Encoders for Dynamic Collaborative Filtering**	DIR '21, NL, Online
Dec. '21	*Podcast Interview*	"Recsperts: Recommender Systems Experts" series.
Nov. '21	**Advances in Bandit Learning for Recommendation**	RMIT University, AUS, Online
Oct. '21	**The Quest for Recommendations with Online Success**	**Keynote**: ORSUM Workshop at RecSys '21, NL
Sept. '21	**Advances in Bandit Learning for Recommendation**	University of Amsterdam, NL
Aug. '21	**Pessimistic Reward Models for Off-Policy Learning in Recommendation**	Spotify, UK & USA, Online
July '21	**Realigning Offline Objectives with Online Success**	Farfetch, PT, Online
Mar. '21	**Recommender Systems as (Offline) Bandit Learning**	Cornell University, USA, Online
Dec. '20	**Joint Policy-Value Learning for Recommendation**	DIR '20, BE, Online
Aug. '20	**Joint Policy-Value Learning for Recommendation**	AISC "ML Explained" Seminars, CAN, Online
Feb. '20	**Counterfactual Policy Learning for Recommendation**	SMiLe '20, DE
Dec. '19	**Counterfactual Policy Learning for Recommendation**	DBDBD '19, NL
Nov. '19	**Efficient Similarity Computation for Collaborative Filtering in Dynamic Environments**	DIR '19, NL
Nov. '19	**Revisiting Offline Evaluation for Implicit-Feedback Recommender Systems**	Uni. of Glasgow, UK
Sept. '19	**Counterfactual Policy Learning for Recommendation**	Data Science Meetups, BE

TEACHING & TUTORIALS

Mar. '24	**Practical Bandits: An Industry Perspective**	*WSDM '24, MX*
May '23	**Practical Bandits: An Industry Perspective**	*WWW '23, TX, USA*
Apr. '21	**Recommender Systems through the Lens of Decision Theory**	*WWW '21, Online*
July '20	**A Gentle Introduction to Recommendation as Counterfactual Policy Learning**	*UMAP '20, Online*
Sep. '19	**Bandit Feedback and Likelihood Models for Recommendation**	*RecSys Summer School, SWE*
June '19	**Neural Networks and Causal Recommendation**	*Data Science Summer School, École Polytechnique, FR*
'17–'21	**Research Thesis Supervisor and Jury Member**	*M.Sc. Computer Science, University of Antwerp, BE*
'17–'20	**Artificial Intelligence Project**	*M.Sc. Computer Science, University of Antwerp, BE*

OPEN-SOURCE PROJECTS

AuctionGym	A Reinforcement Learning Simulator for Online Advertising	**GitHub:** amzn/auction-gym/
RecoGym	A Reinforcement Learning Simulator for Recommender Systems	**GitHub:** criteo-research/reco-gym/
Various	Implementations of published algorithms & methods	**GitHub:** olivierjeunen

PATENTS

- A Method for Allocating Frequency Channels to a Plurality of Neighbouring Access Points.
  O. Jeunen, E. Zeljkovic, P. Bosch, K. Van Doorselaer, N. Godman. June 2017. eu 17305724.1 – 1875.

PEER-REVIEWED ACADEMIC PUBLICATIONS

Journal Articles

1. Scheduling on a Budget: Avoiding Stale Recommendations with Timely Updates. Elsevier MLWA, 2023
   R. Verachtert, **O. Jeunen** and B. Goethals.
2. Pessimistic Decision-Making for Recommender Systems. ACM ToRS, 2022
   O. Jeunen and B. Goethals.
   Special Issue on Highlights of RecSys '21
3. Embarrassingly Shallow Auto-Encoders for Dynamic Collaborative Filtering. Springer UMUAI. 2022
   O. Jeunen, J. Van Balen and B. Goethals.
   Special Issue on Dynamic Recommender Systems and User Modelling (DyRSUM)

Conference Papers

4. Learning-to-Rank with Nested Feedback.
   H. Sagtani, **O. Jeunen** and A. Ustimenko. ECIR '24
5. Variance Reduction in Ratio Metrics for Efficient Online Experiments.
   S. Baweja, N. Pokharna, A. Ustimenko and **O. Jeunen**. ECIR '24
6. Ad-load Balancing via Off-policy Learning in a Content Marketplace.
   H. Sagtani, M. G. Jhawar, R. Mehrotra and **O. Jeunen**. WSDM '24
7. On Gradient Boosted Decision Trees and Neural Rankers: A Case-Study on Short-Video Recommendations.
   O. Jeunen, Sagtani, Doi, Karimov, Pokharna, Kalim, Ustimenko, Green, Mehrotra and Shi. FIRE '23
8. A Probabilistic Position Bias Model for Short-Video Recommendation Feeds.
   O. Jeunen. RecSys '23
9. Off-Policy Learning to Bid with AuctionGym.
   O. Jeunen, S. Murphy and B. Allison. KDD '23
10. Disentangling Causal Effects from Sets of Interventions in the Presence of Unobserved Confounders.
    O. Jeunen, C. M. Gilligan-Lee, R. Mehrotra and M. Lalmas. NeurIPS '22
11. Pessimistic Reward Models for Off-Policy Learning in Recommendation.
    O. Jeunen and B. Goethals. 🏆 *Best Student Paper Award* at RecSys '21
12. Top-K Contextual Bandits with Equity of Exposure.
    O. Jeunen and B. Goethals. RecSys '21
13. Closed-Form Models for Collaborative Filtering with Side-Information.
    O. Jeunen, J. Van Balen and B. Goethals. RecSys '20
14. Joint Policy-Value Learning for Recommendation.
    O. Jeunen, D. Rohde, F. Vasile and M. Bompaire. KDD '20
15. Efficient Similarity Computation for Collaborative Filtering in Dynamic Environments.
    O. Jeunen, K. Verstrepen and B. Goethals. RecSys '19
16. Revisiting Offline Evaluation for Implicit-Feedback Recommender Systems.
    O. Jeunen. RecSys '19

17. A Machine Learning Approach for IEEE 802.11 Channel Allocation.
O. Jeunen, P. Bosch, M. Van Herwegen, K. Van Doorselaer, N. Godman and S. Latré. CNSM '18

Workshop Papers

18. RecFusion: A Binomial Diffusion Process for 1D Data for Recommendation. GenRec '23
G. Bénédict, **O. Jeunen**, S. Papa, S. Barghav, D. Odijk and M. de Rijke. *at CIKM*

19. A Common Misassumption in Online Experiments with Machine Learning Models. PERSPECTIVES '23
O. Jeunen. *at RecSys*

20. Offline Recommender System Evaluation under Unobserved Confounding. CONSEQUENCES '23
O. Jeunen and B. London. *at RecSys*

21. Ad-load Balancing via Off-policy Learning in a Content Marketplace. CONSEQUENCES '23
H. Sagtani, M. G. Jhawar, R. Mehrotra and **O. Jeunen**. *at RecSys*

22. A Probabilistic Position Bias Model for Short-Video Feeds. ML4SM '23
O. Jeunen. *at WWW*

23. A Probabilistic Framework to Learn Auction Mechanisms via Gradient Descent. AI4WebAds '23
O. Jeunen, L. Stavrogiannis, A. Sayedi and B. Allison. *at AAAI*

24. Learning to Bid with AuctionGym. 🏆 *Best Paper Award* at AdKDD '22
O. Jeunen, S. Murphy and B. Allison. *at KDD*

25. Disentangling Causal Effects from Sets of Interventions in the Presence of Unobserved Confounders. WHY '21
O. Jeunen, C. M. Gilligan-Lee, R. Mehrotra and M. Lalmas. *at NeurIPS*

26. Offline Evaluation of Reward-Optimizing Recommender Systems: The Case of Simulation. SimuRec '21
I. Aouali, A. Benhalloum, M. Bompaire, B. Heymann, **O. Jeunen**, D. Rohde, O. Sakhi and F. Vasile. *at RecSys*

27. An Empirical Evaluation of Doubly Robust Learning for Recommendation. REVEAL '20
O. Jeunen and B. Goethals. *at RecSys*

28. Three Methods for Training on Bandit Feedback. CausalML '19
D. Mykhaylov, D. Rohde, F. Vasile, M. Bompaire and **O. Jeunen**. *at NeurIPS*

29. Learning from Bandit Feedback: An Overview of the State-of-the-art. REVEAL '19
O. Jeunen, D. Mykhaylov, D. Rohde, F. Vasile, A. Gilotte and M. Bompaire. *at RecSys*

30. On the Value of Bandit Feedback for Offline Recommender System Evaluation. REVEAL '19
O. Jeunen, D. Rohde and F. Vasile. *at RecSys*

31. Predicting Sequential User Behaviour with Session-based Recurrent Neural Networks. WSDM Cup '19
O. Jeunen and B. Goethals. *at WSDM*

32. Fair Offline Evaluation Methodologies for Implicit-Feedback Recommender Systems with MNAR Data.
O. Jeunen, K. Verstrepen and B. Goethals. REVEAL '18, *at RecSys*

Tutorials

33. Practical Bandits: An Industry Perspective (*extended*). WSDM '24
B. van den Akker, **O. Jeunen**, Y. Li, B. London, Z. Nazari and D. Parekh.

34. Practical Bandits: An Industry Perspective. WWW '23
B. van den Akker, **O. Jeunen**, Y. Li, B. London, Z. Nazari and D. Parekh.

35. Recommender Systems through the Lens of Decision Theory. WWW '21
F. Vasile, D. Rohde, **O. Jeunen**, A. Benhalloum and O. Sakhi.

36. A Gentle Introduction to Recommendation as Counterfactual Policy Learning. UMAP '20
F. Vasile, D. Rohde, **O. Jeunen** and A. Benhalloum.

Demonstrations

37. Interactive Evaluation of Recommender Systems with SNIPER – An Episode Mining Approach. RecSys '19
S. Moens, **O. Jeunen** and B. Goethals.

Workshop Proposals

38. CONSEQUENCES – Causality, Counteractuals & Sequential Decision-Making for Recommender Systems.
O. Jeunen, T. Joachims, H. Oosterhuis, Y. Saito, F. Vasile and Y. Wang. RecSys '23

39. CONSEQUENCES – Causality, Counteractuals & Sequential Decision-Making for Recommender Systems.
O. Jeunen, T. Joachims, H. Oosterhuis, Y. Saito and F. Vasile. RecSys '22

Preprints

40. On (Normalised) Discounted Cumulative Gain as an Off-Policy Evaluation Metric for Top-n Recommendation.
O. Jeunen, I. Potapov and A. Ustimenko.

Graduate Theses

1. Offline Approaches to Recommendation with Online Success. Ph.D. in Computer Science – 2021
Promotor: prof. dr. Bart Goethals.
Committee: prof. drs. Toon Calders, Maarten de Rijke, Floris Geerts, Thorsten Joachims, and Mounia Lalmas.

2. Data-Driven Frequency Planning in IEEE 802.11 Networks. M.Sc. in Computer Science – 2017
Promotor: prof. dr. Steven Latré. *Summa cum laude*

PROFESSIONAL SERVICE

Organising Committee
Dutch-Belgian Information Retrieval Workshop (**DIR**) '20
Web chair for **RecSys** '22–'23
CONSEQUENCES Workshop at **RecSys** '22–'23
Publicity chair for **RecSys** '24
Industry Day chair or **ECIR** '24

Program Committee
RecSys '21—'23
ORSUM Workshop at **RecSys** '21—'23
LERI Workshop at **RecSys** '23
NORMalize Workshop at **RecSys** '23
PERSPECTIVES Workshop at **RecSys** '23
RecSys Challenge Workshop at **RecSys** '23
WWW '22
SIGKDD '22—'23
EvalRS Workshop at **KDD** '23
WSDM '22—'24
CIKM '23
SIGIR '23—'24
ECIR '24

Reviewer
ACM Transactions on Information Systems (**ToIS**)
ACM Transactions on Recommender Systems (**ToRS**)
IEEE Transactions on Knowledge & Data Engineering (**TKDE**)
Springer Data Mining and Knowledge Discovery (**DAMI**)
Springer Machine Learning (**ML**)
CHI '23
AISTATS '24