dr. Olivier JEUNEN

Post-Doctoral Scientist at Amazon

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I'm a Post-Doctoral Scientist at Amazon, under the "Early-Career Scientist" programme.
My research focuses on the intersection of machine learning, information retrieval and causal inference.
I particularly enjoy working on a synthesis of theory and application, driving impact with high-quality research from sound foundations.

Professional Experience

Present December 2021	**Post-Doctoral Research Scientist** "*Early-Career Scientist*" Programme, researching applications of machine learning and causal inference.	**Amazon**, Edinburgh, United Kingdom
November 2021 September 2021	**Post-Doctoral Research Scientist** Research focused on implicit-feedback recommender systems and their evaluation in the Adrem Data Lab.	**University of Antwerp**, Belgium
September 2021 October 2017	**Doctoral Research Scientist** Research focused on implicit-feedback recommender systems and their evaluation in the Adrem Data Lab.	**University of Antwerp**, Belgium
August 2021 June 2021	**Research Scientist Intern** Research centred around the intersection of causal inference and machine learning. (Remote)	**Spotify**, London, United Kingdom
November 2020 September 2020	**Research Engineer Intern** Research centred around uncertainty estimation for causal models in computational advertising. (Remote)	**Facebook**, London, United Kingdom
September 2019 June 2019	**Research Scientist Intern** Research centred around applications of counterfactual inference for recommender systems.	**Criteo AI Lab**, Paris, France
August 2017	**Data Scientist** Back-end development for a real-time recommendation architecture.	**Froomle**, Antwerp, Belgium (*University of Antwerp spin-off*)
June 2017 July 2016	**Data Scientist & Research Intern** Research on distributed learning for computational advertising.	**PrediCube**, Antwerp, Belgium (*University of Antwerp spin-off*)
June 2017 September 2015	**Data Scientist & Research Intern** Internships, student jobs and MSc thesis focused on machine learning applications with IoT data.	**Technicolor**, Antwerp, Belgium

Education

2017 – 2021	**Ph.D. in Computer Science**	*University of Antwerp, Belgium*
2015 – 2017	**M.Sc in Computer Science** (Minor: Data Science & Research)	**Magna cum laude.** *University of Antwerp, Belgium*
2012 – 2016	**B.Sc. in Computer Science**	**Cum laude.** *University of Antwerp, Belgium*
2006 – 2012	**Latin – Mathematics** (Extra mathematics)	*Moretus-Ekeren, Belgium*
Jan. – June 2015	**Erasmus Programme** (Exchange semester)	*University of Edinburgh, United Kingdom*

Technical Skills & Research Interests

Programming	C, **C++**, Java, **Python**, SQL
Frameworks	Apache Hive, **Numpy**, **Pandas**, **PyTorch**, **Scipy**, **Scikit-Learn**, Apache Spark, Tensorflow
Research Focus	**Causal inference**, **information retrieval**, **machine learning**, **recommender systems**

Languages

Dutch	●●●●●
English	●●●●●
French	●●○○○
German	●○○○○

Honours, Awards & Achievements

- **ACM RecSys '21** — Best Student Paper Award
- **ACM RecSys '21** — Outstanding Reviewer Award
- **The Web Conference (WWW) '21** — Student Scholarship Award
- **Criteo's RecoGym Challenge '20** — Led 1st place team (3.000 EUR)
- **ACM RecSys '19** — Doctoral Symposium & SIGCHI Travel Grant (1.500 USD)
- **ACM WSDM Cup '19** — 5th place out of 386 teams

Professional Service

Organising Committee	Dutch-Belgian Information Retrieval Workshop (**DIR '20**), ACM **RecSys '22** Web Chair, Joint **CONSEQUENCES+REVEAL** Workshop at ACM RecSys '22
Program Committee	ACM **RecSys '21—'22** (Main and LBR Tracks), **ORSUM '21** (RecSys Workshop), ACM **WSDM '22–'23**, ACM **WebConf '22** (Web Mining and Content Analysis Track), ACM **SIGKDD '22** (ADS Track)
Journal 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**)
Volunteer	Antwerp School of AI Meetups '19, ACM **RecSys '19** Student Volunteer
Member	ACM **SIGCHI**, **SIGIR**, **SIGKDD**

Teaching & Invited Talks (excluding conference & poster presentations)

Teaching & Tutorials

2017 - 2021	**Research Thesis Supervisor and Jury Member**	M.Sc. Computer Science, University of Antwerp, BE
Sept. 2019	**Bandit Feedback and Likelihood Models for Recommendation**	RecSys Summer School, Gothenburg, SWE
June 2019	**Neural Networks and Causal Recommendation**	Data Science Summer School, École Polytechnique, FR
2019 - 2020	**Artificial Intelligence Project**	M.Sc. Computer Science, University of Antwerp, BE
2017 - 2019	**Project Data Science**	M.Sc. Computer Science, University of Antwerp, BE
Apr. 2021	**Recommender Systems through the Lens of Decision Theory**	WWW '21, Online
July 2020	**A Gentle Introduction to Recommendation as Counterfactual Policy Learning**	UMAP '20, Online

Invited Talks, Keynotes & Guest Lectures

June 2022	**Pessimistic Decision-Making for Recommendation**	PRS Workshop, Netflix, USA
Apr. 2022	**Machine Learning Challenges in Advertising at Amazon**	*Guest Lecture* at University of Antwerp, BE, Online
Apr. 2022	**Advances in Bandit Learning for Recommendation**	Booking.com, NL, Online
Feb. 2022	**Embarassingly Shallow Auto-Encoders for Dynamic Collaborative Filtering**	DIR '21, NL, Online
Nov. 2021	**Advances in Bandit Learning for Recommendation**	RMIT University, AUS, Online
Oct. 2021	**The Quest for Recommendations with Online Success**	ORSUM Workshop **Keynote** at RecSys '21, NL
Sept. 2021	**Advances in Bandit Learning for Recommendation**	University of Amsterdam, NL
Aug. 2021	**Pessimistic Reward Models for Off-Policy Learning in Recommendation**	Spotify, UK & USA, Online
July 2021	**Realigning Offline Objectives with Online Success**	Farfetch, PT, Online
Mar. 2021	**Recommender Systems as (Offline) Bandit Learning**	Cornell University, USA, Online
Dec. 2020	**Joint Policy-Value Learning for Recommendation**	DIR '20, BE, Online
Aug. 2020	**Joint Policy-Value Learning for Recommendation**	AISC "Machine Learning Explained" Seminars, CAN, Online
Feb. 2020	**Counterfactual Policy Learning for Recommendation**	SMiLe '20, DE
Dec. 2019	**Counterfactual Policy Learning for Recommendation**	DBDBD '19, NL
Nov. 2019	**Efficient Similarity Computation for Collaborative Filtering in Dynamic Environments**	DIR '19, NL
Nov. 2019	**Revisiting Offline Evaluation for Implicit-Feedback Recommender Systems**	University of Glasgow, UK
Sept. 2019	**Counterfactual Policy Learning for Recommendation**	Data Science Meetups, BE

Podcast Interview

Dec. 2021	**Episode 3: Olivier Jeunen**	"Recsperts: Recommender Systems Experts" series by Marcel Kurovski.

Open-Source Projects (excluding implementations of publications)

AuctionGym – A Reinforcement Learning Simulator for Online Advertising	Paper	GitHub		July 2022
RecoGym – A Reinforcement Learning Simulator for Recommender Systems	Blogpost	GitHub		June 2019
WSDM Cup: Spotify Sequential Skip Prediction	AICrowd	Paper	GitHub	Jan. 2019
Various Kaggle Competitions		Kaggle		2017-2018

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.
Patent Granted by USPTO and EPO – Application Pending in Brazil and China.

Peer-Reviewed Academic Publications

Journal Papers

1. **Scheduling on a Budget: Avoiding Stale Recommendations with Timely Updates.** — Elsevier MLWA, 2022
   R. Verachtert, **O. Jeunen** and B. Goethals. (Under review)
   Under review for Elsevier's Machine Learning with Applications .

2. **Pessimistic Decision-Making for Recommender Systems.** — ACM ToRS, 2022
   O. Jeunen and B. Goethals. (Under review)
   ACM Transactions on Recommender Systems (ToRS) 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.
   User Modelling and User-Adapted Interaction (UMUAI) Special Issue on Dynamic Recommender Systems and User Modelling (DyRSUM).

Conference Papers

4. **Pessimistic Reward Models for Off-Policy Learning in Recommendation.** — RecSys '21
   O. Jeunen and B. Goethals. 🏆 Best Student Paper 🏆

5. **Top-K Contextual Bandits with Equity of Exposure.** — RecSys '21
   O. Jeunen and B. Goethals.

6. **Closed-Form Models for Collaborative Filtering with Side-Information.** — RecSys '20
   O. Jeunen, J. Van Balen and B. Goethals. (Late-Breaking-Result)

7. **Joint Policy-Value Learning for Recommendation.** — KDD '20
   O. Jeunen, D. Rohde, F. Vasile and M. Bompaire.

8. **Efficient Similarity Computation for Collaborative Filtering in Dynamic Environments.** — RecSys '19
   O. Jeunen, K. Verstrepen and B. Goethals.

9. **Revisiting Offline Evaluation for Implicit-Feedback Recommender Systems.** — RecSys '19
   O. Jeunen. (Doctoral Symposium)

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

Workshop Papers, Tutorials & Demonstrations

11. **Learning to Bid with AuctionGym.** — AdKDD '22
    O. Jeunen, S. Murphy and B. Allison. (KDD Workshop)

12. **CONSEQUENCES – Causality, Counteractuals & Sequential Decision-Making for Recommender Systems.** — CONSEQUENCES '22
    O. Jeunen, T. Joachims, H. Oosterhuis, Y. Saito and F. Vasile. (RecSys Workshop Proposal)

13. **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. (NeurIPS Workshop)

14. **Offline Metrics and Counterfactual Estimators have Failed to Deliver Reward-Optimizing Recommendation.** — SimuRec '21
    I. Aouali, A. Benhalloum, M. Bompaire, B. Heymann, **O. Jeunen**, D. Rohde, O. Sakhi and F. Vasile. (RecSys Workshop Position Paper)

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

16. **An Empirical Evaluation of Doubly Robust Learning for Recommendation.** — REVEAL '20
    O. Jeunen and B. Goethals. (RecSys Workshop)

17. **A Gentle Introduction to Recommendation as Counterfactual Policy Learning.** — UMAP '20
    F. Vasile, D. Rohde, **O. Jeunen** and A. Benhalloum. (Tutorial)

18. **Three Methods for Training on Bandit Feedback.** — CausalML '19
    D. Mykhaylov, D. Rohde, F. Vasile, M. Bompaire and **O. Jeunen**. (NeurIPS Workshop)

19. **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. (RecSys Workshop)

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

21. **Interactive Evaluation of Recommender Systems with SNIPER - An Episode Mining Approach**. RecSys '19
S. Moens, **O. Jeunen** and B. Goethals. (Demo)

22. **Predicting Sequential User Behaviour with Session-based Recurrent Neural Networks**. WSDM Cup '19
O. Jeunen and B. Goethals. (WSDM Workshop)

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

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)