

Jill-Jênn Vie [ʤil ʤɛn vi] or JJ [ʤiʤi]

Inria Saclay, Soda team, Bât. Alan Turing, 1 rue Honoré d'Estienne d'Orves, 91120 Palaiseau, France
+33 6 42 62 39 74 vie@jill-jenn.net <https://jjv.ie> ORCID 0000-0002-9304-2220



Interests

- Educational Data Mining
- Optimizing Human Learning
- Recommender systems, Cold-start

Skills

- Programming: Python, OCaml, R, C++
- Computing: numpy, scipy, sklearn, tf, PyTorch
- Web: Django, HTML5, JS, Vue.js, PHP, PostgreSQL

Experience

From 2019 Research Scientist (*chargé de recherche de classe normale*) at Inria Saclay, Soda team (previously Lille, SequeL/Scool team 2019–2021).

From 2022 Lecturer at École polytechnique, France. Teaching competitive programming (wrote 2 books about it).

2019 Visiting Scholar (3 months) at New York University.

2017–2019 Postdoctoral Researcher (2.5 years) at RIKEN AIP, Tokyo, Japan.

From 2016 I developed **Pix** at the French MoE for certifying digital skills (6M active users as of 2023 = 10% of France.)

2015–2016 Director & Writer of *La Faute à l'algo* (TV sci-fi show on Nolife channel) with Michel Blockelet.

Education

2014–2016 PhD in Computer Science, Université Paris-Saclay, France.

Title: “Adaptive Testing using Cognitive Diagnosis for Large-Scale Learning”

K2 Prize “Machine Learning & Data Science”

2014 Agrégation de mathématiques, French diploma for higher education teaching.

2013–2014 MSc of Teaching in Mathematics (Training for Higher Education Teaching).

2009–2012 MSc of Computer Science (Parisian Master of Research in Computer Science).

2010 Normalien at ENS Paris-Saclay (admitted 2nd).

2008–2009 BSc of Computer Science at ENS de Lyon.

Teaching Experience

From 2022 ICPC SWERC training, MSc (M1), École polytechnique. **2 Silver medals at ICPC SWERC 2023.**

From 2020 Deep Learning: Do It Yourself!, MSc (M1), École normale supérieure.

2022 Préparation à l'agrégation d'informatique, Sorbonne Université.

2021 Algorithms & Programming in Python, MSc (M1), Université de Lille.

2020 & 2021 Introduction to Machine Learning, MSc (M2), Polytech'Lille.

2016 Algorithms & Programming in Python, BSc (L3), CentraleSupélec, Châtenay-Malabry.

2015 Introduction to Statistics, MSc (M1), EPF, Sceaux.

2012–2013 Algorithms & Programming in Caml Light, Lycée Louis-le-Grand (MP*), Paris.

2009–2011 Oral examiner in Mathematics, Lycée Sainte-Marie & du Parc (MP*), Lyon, Lycée Condorcet (ECS), Paris.

Publications

Journal Articles

- [1] Erva Nihan Kandemir, Jill-Jênn Vie, Adam Sanchez-Ayte, Olivier Palombi, and Franck Ramus. “Investigating the Influence of Training Difficulty on the Learning Outcomes of Medical Students”. In: *Journal of Computer Assisted Learning* 42.1 (2026). e70172 JCAL-24-1193.R2, e70172. DOI: <https://doi.org/10.1002/jcal.70172>. URL: <https://inria.hal.science/hal-05371759v1>.
- [2] Clémence Réda, Jill-Jênn Vie, and Olaf Wolkenhauer. “Comprehensive evaluation of pure and hybrid collaborative filtering in drug repurposing”. In: *Scientific Reports* 15.2711 (Jan. 2025), p. 2711. DOI: [10.1038/s41598-025-85927-x](https://doi.org/10.1038/s41598-025-85927-x). URL: <https://hal.science/hal-04626970>.

- [3] Clémence Réda, Jill-Jënn Vie, and Olaf Wolkenhauer. “Joint Embedding-Classifer Learning for Interpretable Collaborative Filtering”. In: *BMC Bioinformatics* 26.1 (Jan. 2025), p. 26. DOI: [10.1186/s12859-024-06026-8](https://doi.org/10.1186/s12859-024-06026-8). URL: <https://hal.science/hal-04625183>.
- [4] Clémence Réda, Jill-Jënn Vie, and Olaf Wolkenhauer. “stanscofi and benchscofi: a new standard for drug repurposing by collaborative filtering”. In: *Journal of Open Source Software* 9.93 (2024), p. 5973.
- [5] Yoav Bergner, Peter Halpin, and Jill-Jënn Vie. “Multidimensional Item Response Theory in the Style of Collaborative Filtering”. In: *Psychometrika* 87.1 (2022), pp. 266–288. URL: <https://rdcu.be/cAcgu>.
- [6] Iulia Petria, Samuel Albuquerque, Gael Varoquaux, Jill-Jënn Vie, Gilberto Velho, Gianluca Perseghin, Ronan Roussel, and Louis Potier. “424-P: Body-Weight Variability and Risk of Cardiovascular Outcomes in Type 1 Diabetes: Results from the DCCT/EDIC Studies”. In: *Diabetes* 71.Supplement_1 (June 2022). URL: <https://hal.archives-ouvertes.fr/hal-03818459>.
- [7] Roman Hossein Khonsari, Mélodie Bernaux, Jill-Jënn Vie, Abdourahmane Diallo, Nicolas Paris, Liem Binh Luong, Jamal Assouad, Catherine Paugam, Tabassome Simon, Éric Vicaut, Rémy Nizard, and Éric Vibert. “Risks of early mortality and pulmonary complications following surgery in patients with COVID-19”. In: *British Journal of Surgery* (Feb. 2021). znanb007. ISSN: 0007-1323. eprint: <https://academic.oup.com/bjs/advance-article-pdf/doi/10.1093/bjs/znab007/36220061/znab007.pdf>. URL: <https://doi.org/10.1093/bjs/znab007>.
- [8] Youri Yordanov, Aurélien Dinh, Alexandre Bleibtreu, Arthur Mensch, François-Xavier Lescure, Erwan Debuc, Patrick Jourdain, Luc Jaulmes, Agnes Dechartres, and AP-HP/Universities/Inserm COVID-19 research collaboration. “Clinical characteristics and factors associated with hospital admission or death in 43103 adult outpatients with coronavirus disease 2019 managed with the Covidom telesurveillance solution: a prospective cohort study”. In: *Clinical Microbiology and Infection* 27.8 (2021). Mon nom est listé dans la publication à “AP-HP/Universities/Inserm COVID-19 research collaboration”, pp. 1158–1166. ISSN: 1198-743X. URL: <https://www.sciencedirect.com/science/article/pii/S1198743X21001932>.
- [9] Gabriel A Brat, Griffin M Weber, Nils Gehlenborg, Paul Avillach, Nathan P Palmer, Luca Chiovato, James Cimino, Lemuel R Waitman, Gilbert S Omenn, Alberto Malovini, et al. “International electronic health record-derived COVID-19 clinical course profiles: the 4CE Consortium”. In: *npj Digital Medicine* 3.1 (Aug. 2020), p. 109. ISSN: 2398-6352. URL: <https://www.nature.com/articles/s41746-020-00308-0>.
- [10] Jill-Jënn Vie, Fabrice Popineau, Éric Bruillard, and Yolaine Bourda. “Automated Test Assembly for Handling Learner Cold-Start in Large-Scale Assessments”. In: *International Journal of Artificial Intelligence in Education* (2018), pp. 1–16. URL: <https://rdcu.be/G30H>.
- [11] Jill-Jënn Vie, Fabrice Popineau, Éric Bruillard et Yolaine Bourda. « Utilisation de tests adaptatifs dans les MOOC dans un cadre de crowdsourcing ». In : *Revue STICEF, Volume 24, numéro 2, 2017* (2018). ISSN : 1764-7223. DOI : [10.23709/sticef.24.2.6](https://doi.org/10.23709/sticef.24.2.6).

Books

- [1] I-Han Sharon Hsiao, Shaghayegh Sherry Sahebi, François Bouchet, and Jill-Jënn Vie, eds. *Proceedings of the 14th International Conference on Educational Data Mining*. July 2021. URL: <https://hal.science/hal-03918191>.
- [2] Christoph Dürr and Jill-Jënn Vie. *Competitive Programming in Python. 128 Algorithms to Develop your Coding Skills*. Cambridge University Press, 2020.
- [3] Christoph Dürr and Jill-Jënn Vie. 培養與鍛鍊程式設計的邏輯腦。程式設計大賽的 128 個進階技巧 (使用 Python)。博碩文化股份, 2019. URL: <http://www.drmaster.com.tw/BookInfo.asp?BookID=MP11906>.
- [4] Christoph Dürr and Jill-Jënn Vie. 高效算法。竞赛、应试与提高必修 128 例。人民邮电出版社, 2018. URL: <https://book.douban.com/subject/30210075/>.
- [5] Fabrice Popineau, Michal Valko, and Jill-Jënn Vie, eds. *Proceedings of the 1st International Workshop eliciting Adaptive Sequences for Learning (WeASeL)* (Montréal, Canada, June 12, 2018). CEUR Workshop Proceedings 1. 2018. URL: <https://humanlearn.io/proceedings/vol-1/>.
- [6] Ismael Belghiti, Roger Mansuy, and Jill-Jënn Vie. *Les clés pour l’info : ENS et agrégation (option D)*. Calvage et Mounet, 2016.
- [7] Christoph Dürr et Jill-Jënn Vie. *Programmation efficace. Les 128 algorithmes qu’il faut avoir compris et codés dans sa vie*. Ellipses, 2016. URL : <https://tryalgo.org>.

Book Chapters

- [1] Jill-Jënn Vie, Fabrice Popineau, Yolaine Bourda, and Éric Bruillard. “A Review of Recent Advances in Adaptive Assessment”. In: *Learning analytics: Fundamentals, Applications, and Trends*. Springer, 2017, pp. 113–142. URL: <https://hal.archives-ouvertes.fr/hal-01488284/document>.

Conference Proceedings

- [1] Naoyuki Kita, Jill-Jênn Vie, Koh Takeuchi, and Hisashi Kashima. “Robust Post-hoc Score Allocation in Exams”. In: *The 16th International Learning Analytics & Knowledge Conference, Bergen, Norway*. in press. 2026.
- [2] Anav Agrawal and Jill-Jênn Vie. “AlgoAce: Retrieval-Augmented Generation for Assistance in Competitive Programming”. In: *Proceedings of 9th Educational Data Mining in Computer Science Education Workshop (CSEDM 2025)*. Palermo, Italy, July 2025. URL: <https://hal.science/hal-05089333>.
- [3] Samuel Girard, Juan D. Pinto, Jill-Jênn Vie, and Amel Bouzeghoub. “RegKT: Interpretable and Robust Deep Knowledge Tracing With IRT-Regularizer”. In: *The 2nd Human-Centric eXplainable AI in Education (HEXED) Workshop at EDM (Educational Data Mining) 2025*. in press. 2025. URL: https://drive.google.com/file/d/12IMLMyo6cZif12YwxhekrHDI_RMTh04N/view.
- [4] Carole Ibrahim, Hiba Bederina, Daniel Cuesta, Laurent Montier, Cyrille Delabre, and Jill-Jênn Vie. “Diversified recommendations of cultural activities with personalized determinantal point processes”. In: *Proceedings of RecSoGood workshop at RecSys 2025*. Prague, Czech Republic, Sept. 2025, in press.
- [5] Erva Nihan Kandemir, Jill-Jênn Vie, Adam Sanchez-Ayte, Olivier Palombi, and Franck Ramus. “Adaptation of the Multi-Concept Multivariate Elo Rating System to Medical Students’ Training Data”. In: *Proceedings of the Fourteenth International Conference on Learning Analytics and Knowledge (LAK 2024)*. 2024, in press. URL: <https://arxiv.org/abs/2403.07908>.
- [6] Jean Vassoyan, Jill-Jênn Vie, and Pirmin Lemberger. “Towards Scalable Adaptive Learning with Graph Neural Networks and Reinforcement Learning”. In: *Proceedings of the 16th International Conference on Educational Data Mining, EDM 2023, Bengaluru, India, July 11-14, 2023*. Ed. by Mingyu Feng, Tanja Käser, Partha P. Talukdar, Rakesh Agrawal, Y. Narahari, and Mykola Pechenizkiy. International Educational Data Mining Society, 2023. URL: <https://arxiv.org/abs/2305.06398>.
- [7] Jill-Jênn Vie and Hisashi Kashima. “Deep Knowledge Tracing is an implicit dynamic multidimensional item response theory model”. In: *Proceedings of the 31st International Conference on Computers in Education*. 2023, in press. URL: <https://inria.hal.science/hal-04180391>.
- [8] Sein Minn, Jill-Jênn Vie, Koh Takeuchi, Hisashi Kashima, and Feida Zhu. “Interpretable Knowledge Tracing: Simple and Efficient Student Modeling with Causal Relations”. In: *Proceedings of the AAAI Conference on Artificial Intelligence*. Vol. 36. 11. 2022, pp. 12810–12818. URL: <https://ojs.aaai.org/index.php/AAAI/article/view/21560>.
- [9] Jill-Jênn Vie, Tomas Rigaux, and Hisashi Kashima. “Variational Factorization Machines for Preference Elicitation in Large-Scale Recommender Systems”. In: *2022 IEEE International Conference on Big Data (Big Data)*. Los Alamitos, CA, USA: IEEE Computer Society, Dec. 2022, pp. 5607–5614. URL: <https://ieeexplore.ieee.org/document/10020448>.
- [10] Jill-Jênn Vie*, Tomas Rigaux*, and Sein Minn. “Privacy-Preserving Synthetic Educational Data Generation”. In: *Proceedings of EC-TEL 2022. Educating for a New Future: Making Sense of Technology-Enhanced Learning Adoption*. 2022, pp. 393–406. ISBN: 978-3-031-16290-9. URL: <https://hal.archives-ouvertes.fr/hal-03715416>.
- [11] Benoît Choffin, Fabrice Popineau, Yolaine Bourda, and Jill-Jênn Vie. “DAS3H: Modeling Student Learning and Forgetting for Optimally Scheduling Distributed Practice of Skills”. In: *Proceedings of the Twelfth International Conference on Educational Data Mining (EDM 2019)*. Best Full Paper Award. 2019, pp. 29–38. URL: <https://arxiv.org/abs/1905.06873>.
- [12] Jill-Jênn Vie and Hisashi Kashima. “Knowledge Tracing Machines: Factorization Machines for Knowledge Tracing”. In: *Proceedings of the 33th AAAI Conference on Artificial Intelligence*. (Acceptance rate: 1150/7095 = 16%.) 2019, pp. 750–757. URL: <https://arxiv.org/abs/1811.03388>.
- [13] Sein Minn, Yi Yu, Michel Desmarais, Feida Zhu, and Jill-Jênn Vie. “Deep Knowledge Tracing and Dynamic Student Classification for Knowledge Tracing”. In: *Proceedings of the 18th IEEE International Conference on Data Mining*. 2018, pp. 1182–1187. URL: <https://arxiv.org/abs/1809.08713>.
- [14] Jill-Jênn Vie, Fabrice Popineau, Yolaine Bourda, and Éric Bruillard. “Adaptive Testing Using a General Diagnostic Model”. In: *European Conference on Technology Enhanced Learning*. (Acceptance rate: 26/145 = 18%.) Springer. 2016, pp. 331–339.
- [15] Michel Abdalla and Jill-Jênn Vie. “Leakage-Resilient spatial encryption”. In: *International Conference on Cryptology and Information Security in Latin America*. Springer. 2012, pp. 78–99.

Other publications

- [1] Benoît Choffin, Fabrice Popineau, Yolaine Bourda, and Jill-Jênn Vie. “Evaluating DAS3H on the EdNet Dataset”. In: *AAAI 2021 - The 35th Conference on Artificial Intelligence / Imagining Post-COVID Education with AI*. Virtual, United States, Feb. 2021. URL: <https://hal.archives-ouvertes.fr/hal-03175874>.

- [2] Jill-Jênn Vie. “Deep Factorization Machines for Knowledge Tracing”. In: *Proceedings of the Thirteenth Workshop on Innovative Use of NLP for Building Educational Applications*. 2018, pp. 370–373. URL: <https://arxiv.org/abs/1805.00356>.
- [3] Jill-Jênn Vie, Fabrice Popineau, Françoise Tort, Benjamin Marteau, and Nathalie Denos. “A Heuristic Method for Large-Scale Cognitive-Diagnostic Computerized Adaptive Testing”. In: *Proceedings of the Fourth (2017) ACM Conference on Learning @ Scale*. ACM. 2017, pp. 323–326. URL: <https://github.com/jilljenn/las2017-wip/>.
- [4] Jill-Jênn Vie, Florian Yger, Ryan Lahfa, Basile Clement, Kévin Cocchi, Thomas Chalumeau, and Hisashi Kashima. “Using Posters to Recommend Anime and Mangas in a Cold-Start Scenario”. In: *2017 14th IAPR International Conference on Document Analysis and Recognition (ICDAR) – Second International Workshop on Comics Analysis, Processing and Understanding*. Vol. 03. Nov. 2017, pp. 21–26. URL: <https://arxiv.org/abs/1709.01584>.
- [5] Jill-Jênn Vie, Fabrice Popineau, Jean-Bastien Grill, Éric Bruillard, and Yolaine Bourda. “Predicting Performance over Dichotomous Questions: Comparing Models for Large-Scale Adaptive Testing”. In: *8th International Conference on Educational Data Mining*. 2015.
- [6] Jill-Jênn Vie, Fabrice Popineau, Jean-Bastien Grill, Éric Bruillard et Yolaine Bourda. « Prédiction de performance sur des questions dichotomiques : comparaison de modèles pour des tests adaptatifs à grande échelle ». In : *Atelier Évaluation des Apprentissages et Environnements Informatiques*. 2015.

Preprints

- [1] Clémence Réda, Tomas Rigaux, Hiba Bederina, Koh Takeuchi, Hisashi Kashima, and Jill-Jênn Vie. “Adaptive Quality-Diversity Trade-offs for Large-Scale Batch Recommendation”. under review. 2026. URL: <https://openreview.net/forum?id=s6MBBiKsIP>.
- [2] Jean Vassoyan, Anan Schütt, Jill-Jênn Vie, Arun-Balajiee Lekshmi-Narayanan, Elisabeth André, and Nicolas Vayatis. “A Pre-Trained Graph-Based Model for Adaptive Sequencing of Educational Documents”. Presented at the NeurIPS 2024 Workshop on Large Foundation Models for Educational Assessment. 2024. URL: <https://inria.hal.science/hal-04779162>.

Dissemination of scientific knowledge

- [1] Jill-Jênn Vie. “Comment coder un système de recommandation en Python : l’exemple de Mangaki”. In: *GNU/Linux Magazine Hors-Série* 94 (2018). URL: <https://mangaki.fr/static/mangaki-linuxmag.pdf>.
- [2] Jill-Jênn Vie. “Grolopin et les plans projectifs finis”. In: *Tangente Hors-Série* 52 (2014), pp. 128–131.
- [3] Jill-Jênn Vie. “Langages rationnels et automates finis”. In: *Bibliothèque Tangente* 52 (2014), pp. 52–55.
- [4] Jill-Jênn Vie, Alexandre Talon, and Arthur Charguéraud. “Les concours informatiques destinés aux jeunes”. In: *Tangente Hors-Série* 52 (2014), p. 22.
- [5] Jill-Jênn Vie. “Un algorithme de composition musicale”. In: *Quadrature* 72 (2009), pp. 10–14. URL: https://jill-jenn.net/_static/works/un-algorithme-de-composition-musicale.pdf.

Professional Affiliations & Activities

Board of Directors Société informatique de France (French Computer Science Society), 2020–2023; **Secretary** of SIF in 2022.

Expert at the European Commission in AI & Data for Education & Training (2021–2022).

Member of *Conseil scientifique de l’Éducation nationale* (since 2023).

Scientific committee of Regalia Inria project (regulation of algorithms)

Jury *Agrégation d’informatique* (since 2022), entrance examinations at Écoles normales supérieures (2020–2022)

Program Committee EDM 2021 (**General Chair**), EDM 2019 (demos & posters), EDM 2020 (senior PC), PAKDD 2023 (workshop chair), EDM 2023–2024 (publicity chair)

Editorial Board *Journal of Educational Data Mining* (JEDM, 2020–2022)

Workshop Organizer Fairness, Accountability and Transparency in Educational Data Mining (FATED 2020), Optimizing Human Learning: Workshop eliciting Adaptive Sequences for Learning (WASL 2018–2020, WASL 2024)

Reviewer NeurIPS 2021–2023, AAAI 2020–2021, IEEE BigData 2022, PAKDD 2023, AISTATS 2021, ICDM 2018, ICCE 2023, *IEEE Transactions on Learning Technologies*, JEDM

Advisory Board NSERC (Canada), Université Grenoble-Alpes, projet Erasmus+ AI4T (advisory board)

PhD jury Benoît Choffin (2021, invité), Olivier Allègre (2023)

PhD midway committee Mélina Verger (2023–2024), Erva Nihan Kandemir (2023)

Supervisor Alexis Rivière, Dylan Tanguy (2015), Thomas Chalumeau (2017), Aymeric Floyrac, Pierre Bourse, Salim Nadir, Sein Minn, Vianney Taquet, Clémence Léguillette, Yassine Esmili, Mehdi Douch (2020), Florent Dufay (2021), Tomas Rigaux (from 2021), Jean Vassoyan (from 2022), Clémence Réda (from 2023), Samuel Girard (from 2023), Marie Generali (from 2024), Achraf Chaouch (2024), Hiba Bederina (from 2024)

Coach ENS Paris-Saclay team at the International Collegiate Programming Contest (ICPC, 2015–2016 & 2023), Université de Lille (2021), École polytechnique (from 2022)

Organizations Etalab (Prime Minister’s Office for Open Data, 2017), BetaGouv (State Startups, 2016–2017)

Awards & Grants

2024 Two Silver medals at **International Collegiate Programming Contest** (ICPC; teams cnXtv 3rd et eXotic 4th of École polytechnique), qualified to European EUC and ICPC World Finals 2024

2024–2026 Inria associated team with Kyoto University **RED**: *recommendations encouraging diversity*

2021–2023 Inria associated team with Kyoto University) **OPALE**: *optimal policy active learning for education*

2023 Funding Paris Region PhD from Île-de-France region (105k €)

2022

- **T2D-INTERCEPT**, Horizon Europe.
- Co-supervisor Marie Skłodowska-Curie funding **ReCESS** for Clémence Réda.

2020 **NLnet’s NGI Zero funding** for Mangaki, an open source manga recommender system.

EIT Health Covidom Community, together with **Assistance Publique Hôpitaux de Paris (AP-HP)**.

2019 **Best Full Paper Award** of the 12th Educational Data Mining conference, together with Benoît Choffin, Fabrice Popineau, Yolaine Bourda.

2016 **Japanese Cultural Institute Prize 2016 winner & Student Demo Cup Prize** for Mangaki (president, 2016–2019), a non-profit organization that builds an open-source anime/manga recommender system in 5 languages.

2016 **K2 Thesis Prize** in the category “Machine Learning & Data Science”.

2014 **Google RISE Award** (20,000 USD) for Prologin (president, 2011–2013), a non-profit organization that organizes a French national programming contest every year (similar to Google Code Jam, Facebook Hacker Cup). With this money, we founded **Girls Can Code!** a programming summer school for K-12 girls.

Languages

French native **English** fluent **Japanese** intermediate