

Jill-Jênn Vie [gɪl ʒɛn 'vi] or JJ [gɪʒi]

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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 2021 Expert at the European Commission in AI & Data for Education & Training.

From 2019 Research Scientist at Inria, France.

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

2017–2019 Postdoctoral Researcher (2 years) at RIKEN AIP, Tokyo.

From 2016 Consulting at the French Ministry of Education / **Pix**. Certification of digital skills.

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. **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

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

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

2020 & 2021 Deep Learning: Do It Yourself!, MSc (M1), École normale supérieure.
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] Yoav Bergner, Peter Halpin, and Jill-Jênn Vie. “Multidimensional Item Response Theory in the Style of Collaborative Filtering”. In: *Psychometrika* (2021), pp. 1–23. URL: <https://rdcu.be/cAcgu>.
- [2] Roman Hossein Khonsari, Mélodie Bernaux, Jill-Jênn 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). znab007. issn: 0007-1323. doi: [10.1093/bjs/znab007](https://doi.org/10.1093/bjs/znab007). 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>.
- [3] 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. doi: [10.1038/s41746-020-00308-0](https://doi.org/10.1038/s41746-020-00308-0). URL: <https://www.nature.com/articles/s41746-020-00308-0>.

- [4] Jill-Jênn 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>.
- [5] Jill-Jênn 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] Christoph Dürr and Jill-Jênn Vie. *Competitive Programming in Python. 128 Algorithms to Develop your Coding Skills*. Cambridge University Press, 2020.
- [2] Christoph Dürr and Jill-Jênn 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>.
- [3] Christoph Dürr and Jill-Jênn 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/>.
- [4] Fabrice Popineau, Michal Valko, and Jill-Jênn 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/>.
- [5] Ismael Belghiti, Roger Mansuy, and Jill-Jênn Vie. *Les clés pour l’info : ENS et Agrégation (option D)*. Calvage et Mounet, 2016.
- [6] Christoph Dürr et Jill-Jênn 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-Jênn Vie, Fabrice Popineau, Yolaine Bourda, and Éric Bruillard. “A Review of Recent Advances in Adaptive Assessment”. In: *Learning analytics: Fundaments, Applications, and Trends*. Springer, 2017, pp. 113–142. URL: <https://hal.archives-ouvertes.fr/hal-01488284/document>.

Conference Proceedings

- [1] 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 AAAI 2022*. 2022, in press. URL: <https://arxiv.org/abs/2112.11209>.
- [2] 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>.
- [3] 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>.
- [4] 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>.
- [5] 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.
- [6] 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] 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>.
- [2] 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/>.

- [3] Jill-Jénn 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>.
- [4] Jill-Jénn 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.
- [5] Jill-Jénn 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] Jill-Jénn Vie and Hisashi Kashima. “Encode & Decode: Generalizing Deep Knowledge Tracing and Multidimensional Item Response Theory”. URL: http://jiji.cat/bigdata/edm2019_submission.pdf.
- [2] Jill-Jénn Vie and Hisashi Kashima. “Fast Variational Learning of Factorization Machines for Large-Scale Recommender Systems”. URL: <http://jiji.cat/bigdata/vie2019vfm.pdf>.

Dissemination of scientific knowledge

- [1] Jill-Jénn 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-Jénn Vie. “Grolopin et les plans projectifs finis”. In: *Tangente Hors-Série* 52 (2014), pp. 128–131.
- [3] Jill-Jénn Vie. “Langages rationnels et automates finis”. In: *Bibliothèque Tangente* 52 (2014), pp. 52–55.
- [4] Jill-Jénn Vie, Alexandre Talon, and Arthur Charguéraud. “Les concours informatiques destinés aux jeunes”. In: *Tangente Hors-Série* 52 (2014), p. 22.
- [5] Jill-Jénn 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), since 2020
Inria Alumni, since 2020

General Chair of the Educational Data Mining 2021 conference

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

Program Committee EDM 2019 (demos & posters), EDM 2020 (senior PC)

Editorial Board *Journal of Educational Data Mining* (JEDM) – Blog Binaire, Le Monde.fr

Reviewer AAAI 2020–2021, AISTATS 2021, *IEEE Transactions on Learning Technologies*, JEDM

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)

Coach ENS Paris-Saclay team at the International Collegiate Programming Contest (ICPC, 2015–2016)

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

Awards & Grants

2020 NLnet’s NGI Zero funding for Mangaki.

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 **Spanish** intermediate **Mandarin** beginner