Héber H. Arcolezi, Ph.D.

heber.hwang-arcolezi@inria.fr @hharcolezi heber-hwang-arcolezi
https://hharcolezi.github.io/

Professional Experience

2023 – · · · · **Tenured Research Scientist (ISFP)**, Inria Grenoble, France.
2022 – 2023 **Postdoctoral Researcher**, Inria Saclay & École Polytechnique, France.

Education

2019 – 2022 **Ph.D. Computer Science**, University Bourgogne Franche-Comté (UBFC), France.
Thesis title: *Production of Categorical Data Verifying Differential Privacy: Conception and Applications to Machine Learning* [link].

2017 – 2019 **M.Sc. Electrical Engineering**, São Paulo State University (UNESP), Brazil.
Thesis title: *A Novel Robust and Intelligent Control Based Approach for Human Lower Limb Rehabilitation via Neuromuscular Electrical Stimulation* [link].

2012 – 2017 **B.Eng. Electrical Engineering**, Mato Grosso State University (UNEMAT), Brazil.
Thesis title: *Um Estudo Complementar ao Projeto de Controle PID no Caso do Pêndulo Invertido (in Portuguese)* [link].

Selected Publications

Journal Articles

1. **H. H. Arcolezi** and S. Gambs, "Revealing the true cost of locally differentially private protocols: An auditing perspective," *Proceedings on Privacy Enhancing Technologies*, vol. 2024, no. 4, pp. 123–141, 2024. DOI: 10.56553/popets-2024-0110.
2. K. Makhlouf, **H. H. Arcolezi**, S. Zhioua, G. B. Brahim, and C. Palamidessi, "On the impact of multi-dimensional local differential privacy on fairness," *Data Mining and Knowledge Discovery*, May 2024, ISSN: 1573-756X. DOI: 10.1007/s10618-024-01031-0.
3. **H. H. Arcolezi**, S. Gambs, J.-F. Couchot, and C. Palamidessi, "On the risks of collecting multidimensional data under local differential privacy," *Proc. VLDB Endow.*, vol. 16, no. 5, pp. 1126–1139, Jan. 2023, ISSN: 2150-8097. DOI: 10.14778/3579075.3579086.
4. **H. H. Arcolezi**, S. Cerna, J.-F. Couchot, C. Guyeux, and A. Makhoul, "Privacy-preserving prediction of victim's mortality and their need for transportation to health facilities," *IEEE Transactions on Industrial Informatics*, vol. 18, no. 8, pp. 5592–5599, 2022. DOI: 10.1109/TII.2021.3123588.
5. **H. H. Arcolezi**, J.-F. Couchot, B. A. Bouna, and X. Xiao, "Improving the utility of locally differentially private protocols for longitudinal and multidimensional frequency estimates," *Digital Communications and Networks*, Jul. 2022. DOI: 10.1016/j.dcan.2022.07.003.

Conference Proceedings

1. R. Binkyte, C. A. Pinzón, S. Lestyán, K. Jung, **H. H. Arcolezi**, and C. Palamidessi, "Causal discovery under local privacy," in *Proceedings of the Third Conference on Causal Learning and Reasoning*, F. Locatello and V. Didelez, Eds., ser. Proceedings of Machine Learning Research, vol. 236, PMLR, Jan. 2024, pp. 325–383. URL: https://proceedings.mlr.press/v236/binkyte24a.html.
2. **H. H. Arcolezi**, K. Makhlouf, and C. Palamidessi, "(local) differential privacy has no disparate impact on fairness," in *Data and Applications Security and Privacy XXXVII*, V. Atluri and A. L. Ferrara, Eds., Cham: Springer Nature Switzerland, 2023, pp. 3–21. DOI: 10.1007/978-3-031-37586-6_1.

3. **H. H. Arcolezi**, C. A. Pinzón, C. Palamidessi, and S. Gambs, "Frequency estimation of evolving data under local differential privacy," in *Proceedings of the 26th International Conference on Extending Database Technology, EDBT 2023, Ioannina, Greece, March 28 - March 31, 2023*, OpenProceedings.org, 2023, pp. 512–525. DOI: 10.48786/EDBT.2023.44.

4. **H. H. Arcolezi**, J.-F. Couchot, S. Gambs, C. Palamidessi, and M. Zolfaghari, "Multi-freq-ldpy: Multiple frequency estimation under local differential privacy in python," in *Computer Security – ESORICS 2022*, V. Atluri, R. Di Pietro, C. D. Jensen, and W. Meng, Eds., Cham: Springer Nature Switzerland, 2022, pp. 770–775. DOI: 10.1007/978-3-031-17143-7_40.

5. **H. H. Arcolezi**, J.-F. Couchot, B. Al Bouna, and X. Xiao, "Random sampling plus fake data: Multidimensional frequency estimates with local differential privacy," in *Proceedings of the 30th ACM International Conference on Information & Knowledge Management*, ACM, Oct. 2021, pp. 47–57. DOI: 10.1145/3459637.3482467.

Skills

Languages	Strong reading, writing and speaking for English, French, Spanish, and Portuguese.
Coding	Python, Java, Matlab & Simulink, Visual Basic, LaTeX.
Databases	MySQL, PostgreSQL.
Misc.	Academic research, teaching, supervising, consultation, and publishing.

Miscellaneous Experience

Grants

2024 – 2028 **ANR AAPG[1] 2024 – JCJC (Young Researcher): Unique PI**. *Aligning Privacy, Utility, and Fairness for Responsible AI.*

2024 – 2026 **Inria Associated Team: Co-PI**. *Algorithmic Auditing of Privacy and Fairness* [link].

2023 – 2027 **ANR AAPG 2023 – PRCE (Academic and Industry Collaboration): Member**. *Making PostgreSQL Differentially Private for Transparent AI* [link].

2023 – 2024 **MIAI Open call to sustain the development and promotion of AI[2]: Unique PI**. *Exploring the Interplay of Differential Privacy and Fairness in ML.*

Awards

2024 **Best Reviewer Award** at PETS 2024.

2023 **Best Paper Award** at DBSec 2023 for the paper "(Local) differential privacy has no disparate impact on fairness".

2021 **Ph.D. Student Mobility Grant** from the University Bourgogne Franche-Comté (UBFC) to visit the Université du Québec à Montréal (UQAM).

Program Committee

2025 PETS, USENIX Security, ICLR.

2024 CCS (Anonymity and Poster Tracks), PETS, IJCAI, FAccT, SAC, ICLR (Tiny Paper Track).

2023 NeurIPS, FAccT, ECML PKDD, PPAI, CCS (Poster Track), ICLR (Tiny Paper Track).

2022 ECML PKDD.

[1] The French equivalent to NSF CAREER award [link].

[2] https://miai.univ-grenoble-alpes.fr/research/projects-for-the-development-and-promotion-of-ai/

Students

2022 – 2024[3] **Karima Makhlouf**, Inria Saclay & École Polytechnique, France.
Co-Supervisor: Catuscia Palamidessi.
Thesis title: *Advancing Ethical and Responsible AI: Exploring Fairness, Privacy, and Explainability through Causal Perspectives*.

Teaching

Winter 2024 **Data Analysis Project with Python**, 10h, Université Grenoble Alpes.
Foundations of Programming with Python, 34h, Université Grenoble Alpes.
Spring 2024 **Database Management Systems**, 27h, Université Grenoble Alpes.
Spring 2023 **Introduction to Computer Science with Java**, 40h, École Polytechnique.
Spring 2022 **Introduction to Computer Science with Java**, 40h, École Polytechnique.
Spring 2021 **Workshop on Privacy for IoT** 20h, Université Bourgogne Franche-Comté.
Winter 2020 **Workshop on Privacy for IoT** 20h, Université Bourgogne Franche-Comté.

References

Available on Request

[3] Defense data scheduled on Ocotber 7th, 2024.