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In Memoriam: Arnaud Nguembang Fadja
March 11, 1988– February 3, 2026

Arnaud Nguembang Fadja, Head of Machine Learning at semvox GmbH, CEO of System Afrik Information Technology and adjunct research fellow of the University of Ferrara, died February 3, 2026 of illness at the age of 38.

Arnaud was born in Douala, Cameroon, in 1988 and obtained a BSc in Computer Science from the University of Dschang and an MSc in Computer Science from the University of Yaoundé before enrolling to the University of Ferrara in 2011 where he obtained another BSc in Information Engineering in 2014 and another MSc in Computer and Automation Engineering in 2016. Arnaud won an award for the best Cameroon student at the University of Ferrara in 2016, awarded by the Cameroonian Association of Ferrara.

After his MSc, he immediately went on to pursue a PhD in Computer Engineering and graduated on April 16, 2020 with the thesis "Scalable Probabilistic Inductive Logic Programming for Big Data" (Nguembang Fadja 2020). After his PhD, Arnaud took a one-year postdoc position at the Department of Engineering, followed by a one-year postdoc position at the Department of Mathematics and Computer Science of the University of Ferrara, before moving to Germany to become Head of Machine Learning in the Research & Development Department of semvox GmbH in Kirkel-Limbach.

semvox is a spin-off company of the German Research Center for Artificial Intelligence (DFKI GmbH) founded in 2008 to develop voice assistance technology for automotive and non-automotive applications and Arnaud's role was to lead and manage a team of

12 ML engineers and project managers, driving the company's Machine Learning and Large Language Model (LLM) strategy and roadmap.

I first met Arnaud in 2015, when he was a master's student. I was immediately struck by his passion for learning, which later developed into a genuine passion for research. I had the privilege of being his PhD supervisor: despite the difficulties caused by the illness that affected him in 2017, we worked very well together and Arnaud was able to obtain his degree without any delay. During this period, I came to appreciate his earnestness, professionalism and enthusiasm, and I can say that we became friends.

Arnaud worked in the field of Probabilistic Logic Programming: after an initial investigation of its capabilities (Nguembang Fadja and Riguzzi 2017b), he concentrated on the problem of learning probabilistic logic programs. We developed a new language called liftable PLP (Nguembang Fadja et al. 2017) that allows faster inference by restricting the full PLP language.

He designed algorithms for learning the parameters (Nguembang Fadja and Riguzzi 2017a; Nguembang Fadja et al. 2018a;b;c; Nguembang Fadja et al. 2018; Nguembang Fadja and Riguzzi 2019) and the structure (Nguembang Fadja and Riguzzi 2019) of liftable PLP.

His PhD work includes also an extension of liftable PLP to hierarchical PLP that, while still allowing fast inference, improves the modeling capabilities of the language. This resulted in novel algorithms for learning the parameters and the structure of hierarchical PLP (Nguembang Fadja et al. 2021b). His work was the basis of further research by the group which led to improved versions of the algorithms.

Arnaud also enjoyed very much applying AI techniques: he used computer vision to detect defects in bottles for cosmetic and pharmaceutical use (Nguembang Fadja et al. 2018a) and he applied the algorithms he developed to early-stage prediction of critical state of Covid-19 patients (Nguembang Fadja et al. 2022).

Arnaud also took teaching commitments at the University of Ferrara: he taught modules for the courses "Applications of Artificial Intelligence in Medicine", MSc in Medicine and Surgery, Department of Morphology, Surgery and Experimental Medicine; and for "Fundamentals of Computer Science", BA in Communication Sciences and Technologies, Department of Humanities. He also taught "Computer Technology and Statistics for Ph.D. Students" at the University of Ferrara and a course on Deep Learning at the Microtec company in Bressanone, Italy, as part of a technology transfer project. He has been a teaching assistant for several courses and has co-supervised 19 bachelor's and master's theses.

He was also very active in the Cameroonian community in Italy: he has been the president of the Cameroonian Community of Ferrara from 2019 to 2022, he was a mentor for many of the Cameroonian students of the University of Ferrara (he gave after-school teaching courses), and he was the Coordinator of Cameroonian students in Italy from 2018 to 2023.

Even after he moved to Germany in 2022, we continued to collaborate remotely, despite the challenges posed by our many professional commitments. During the last couple of years we collaborated on the application of the learning algorithms we developed to Knowledge Graph Completion and Complex Query Answering for Knowledge Graphs.

Whenever he returned to Ferrara, we always tried to meet: I remember him taking a long trip to have a pizza together in the middle of a very hot July.

In 2016 he founded the System Afrik Information Technology company in Ferrara for developing quality software for improving the education system, health conditions, infrastructures and public administration in Africa. One of the products of the company is a school management web application. His dedication to his homeland is testified also by his research on power generation plants for areas only partly served by the electric grid (Atemkeng et al. 2023; 2024) and on defect detection on African plum surfaces (Nguembang Fadja et al. 2024a) that also led to the publication of a dataset (Nguembang Fadja 2024) with a CC-BY-SA license.

Arnaud also collaborated with many researchers at the University of Ferrara, besides the Artificial Intelligence group, in very different fields such as mechanics (Nguembang Fadja et al. 2024b) and genetics (Nguembang Fadja et al. 2021a).

Despite his many commitments, he was also actively involved in sports as a football referee.

Arnaud is fondly remembered by everyone who knew him. Now that he has left us, his example of commitment – both professional and human – will not be forgotten and will continue to live on.

Fabrizio Riguzzi
University of Ferrara

References

Atemkeng, M., Osanyindoro, V., Rockefeller, R., Hamlomo, S., Mulongo, J., Ansah-Narh, T., Tchakounté, F., and Nguembang Fadja, A. (2023). Label assisted autoencoder for anomaly detection in power generation plants. *CoRR*, abs/2302.02896.

Atemkeng, M., Osanyindoro, V., Rockefeller, R., Hamlomo, S., Mulongo, J., Ansah-Narh, T., Tchakounté, F., and Nguembang Fadja, A. (2024). Ensemble learning and deep learning-based defect detection in power generation plants. *J. Intell. Syst.*, 33(1).

Nguembang Fadja, A. (2020). *Scalable Probabilistic Inductive Logic Programming for Big Data.* PhD thesis, University of Ferrara.

Nguembang Fadja, A. (2024). African plum dataset. `https://www.kaggle.com/dsv/9694239`. Accessed: 2026-04-13.

Nguembang Fadja, A., Che, S. R., and Atemkemg, M. (2024a). Intelligent vision system with pruning and web interface for real-time defect detection on african plum surfaces. *Inf.*, 15(10):635.

Nguembang Fadja, A., Cota, G., Bertasi, F., Riguzzi, F., Losi, E., Manservigi, L., Venturini, M., and Bechini, G. (2024b). Machine learning approaches for the prediction of gas turbine transients. *Journal of Computer Science*, 20(5):495–510.

Nguembang Fadja, A., Fraccaroli, M., Bizzarri, A., Mazzuchelli, G., and Lamma, E. (2022). Neural-symbolic ensemble learning for early-stage prediction of critical state of covid-19 patients. *Medical Biol. Eng. Comput.*, 60(12):3461–3474.

Nguembang Fadja, A., Lamma, E., and Riguzzi, F. (2017). Deep probabilistic logic programming. In Theil Have, C. and Zese, R., editors, *Proceedings of the 4th International Workshop on Probabilistic logic programming, (PLP 2017)*, volume 1916 of *CEUR Workshop Proceedings*, pages 3–14, Aachen, Germany. Sun SITE Central Europe.

Nguembang Fadja, A., Lamma, E., and Riguzzi, F. (2018a). Vision inspection with neural networks. In Maratea, M. and Vallati, M., editors, *R.i.C.e.R.c.A: RCRA Incontri E Confronti,*

*Proceedings of the RiCeRcA Workshop co-located with the 17th International Conference of the Italian Association for Artificial Intelligence (Ai*iA 2018)*, volume 2272 of *CEUR Workshop Proceedings*, pages 1–10, Aachen, Germany. Sun SITE Central Europe.

Nguembang Fadja, A. and Riguzzi, F. (2017a). Lifted discriminative learning of probabilistic logic programs. In Lachiche, N. and Vrain, C., editors, *27th International Conference on Inductive Logic Programming, ILP 2017*.

Nguembang Fadja, A. and Riguzzi, F. (2017b). Probabilistic logic programming in action. In Holzinger, A., Goebel, R., Ferri, M., and Palade, V., editors, *Towards Integrative Machine Learning and Knowledge Extraction: BIRS Workshop, Banff, AB, Canada, July 24-26, 2015, Revised Selected Papers*, volume 10344 of *Lecture Notes in Computer Science*, pages 89–116. Springer, Heidelberg, Germany.

Nguembang Fadja, A. and Riguzzi, F. (2019). Lifted discriminative learning of probabilistic logic programs. *Machine Learning*, 108(7):1111–1135.

Nguembang Fadja, A., Riguzzi, F., Bertorelle, G., and Trucchi, E. (2021a). Identification of natural selection in genomic data with deep convolutional neural network. *BioData Mining*, 14(1):51.

Nguembang Fadja, A., Riguzzi, F., and Lamma, E. (2018b). Deep learning for probabilistic logic programming. In Rospocher, M., Serafini, L., and Tonelli, S., editors, *AI*IA 2018 Doctoral Consortium, Proceedings of the AI*IA Doctoral Consortium (DC)*, volume 2249 of *CEUR Workshop Proceedings*, pages 43–47, Aachen, Germany. Sun SITE Central Europe.

Nguembang Fadja, A., Riguzzi, F., and Lamma, E. (2018c). Expectation maximization in deep probabilistic logic programming. In Ghidini, C., Magnini, B., and Passerini, A., editors, *Proceedings of the 17th Conference of the Italian Association for Artificial Intelligence (AI*IA2018), Trento, Italy, 20-23 November, 2018*, volume 11298 of *Lecture Notes in Computer Science*, pages 293–306, Heidelberg, Germany. Springer.

Nguembang Fadja, A., Riguzzi, F., and Lamma, E. (2018). Learning the parameters of deep probabilistic logic programs. In Bellodi, E. and Schrijvers, T., editors, *Probabilistic Logic Programming (PLP 2018)*, volume 2219 of *CEUR Workshop Proceedings*, pages 9–14, Aachen, Germany. Sun SITE Central Europe.

Nguembang Fadja, A., Riguzzi, F., and Lamma, E. (2021b). Learning hierarchical probabilistic logic programs. *Machine Learning*, 110(7):1637–1693.