Nedeljko Radulovic, Ph.D.

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Jeune Docteur

Education

12.2018. - Present	**Ph.D. at Télécom Paris** Institut Polytechnique de Paris, France. Thesis title: *Post-hoc Explainable AI for Black Box Models on Tabular Data* Advisors: prof. Albert Bifet, prof. Fabian Suchanek
09.2017. – 09.2018.	**M.Sc. Computer Science, Paris Saclay University (Télécom Paris)**, Paris, France. 2nd year Master Data & Knowledge, GPA: 16.42/20.0
10.2011. – 10.2014.	**Master of Electrical Engineering and Computer Science** School of Electrical Engineering University of Belgrade, Serbia. Master (1 year): Signal Processing and Process Control, GPA: 10.0/10.0
10.2007. – 09.2011.	**Bachelor of Electrical Engineering and Computer Science** School of Electrical Engineering, University of Belgrade, Serbia. Bachelor (4 years): Signal Processing and Process Control Bachelor, GPA: 9.44/10.0

Working Experience

12.2018. - present	**Graduate Research Assistant at Télécom Paris** Institut Polytechnique de Paris, France

- Developed a global post-hoc approach for interpreting the predictions of black-box models for classification and regression [1].
- Conducted a user study to verify the quality of the explanations with humans.
- Developed a deterministic approach for providing local explanations for regression black-box models [2].
- Deployed a platform for Machine Learning competitions on data streams and organized a real-time competition for IEEE Big Data Conference 2019 [3], [4].
- **Technologies used:** Python, scikit-learn, Pandas, Numpy, scipy, Git, Flask, HTML, Microsoft Azure, Docker, Git, LaTeX,

03.2018. – 09.2018.	**Data Stream Mining Intern at Télécom ParisTech** Advisor prof. Albert Bifet – Université Paris Saclay, France

- Implemented an online evaluation engine and baselines for classification and regression streaming prediction models.
- Created a Github repository for the project, wrote the documentation and User Manual for the platform.
- **Technologies used:** Python, PySpark, Apache Spark Structured Streaming, SQL, MongoDB, Flask, Git, Kafka, Docker, R, Java, HTML, LaTeX

Working Experience (continued)

02.2012. – 09.2015.   🔖 **Research & Development Engineer**
Unit-EM, Belgrade, Serbia **[closed]**

- Developed an algorithm to detect and recognize home appliances based on their power consumption signal spectrum.
- **Technologies used:** Python, Matlab, Signal Processing

Research Publications

1. **N. Radulovic**, A. Bifet, and F. Suchanek, "Confident interpretations of black box classifiers," in *2021 International Joint Conference on Neural Networks (IJCNN)*, **[code]**, IEEE, 2021, pp. 1–8. 🔗 URL: https://ieeexplore.ieee.org/abstract/document/9534234.

2. **N. Radulovic**, A. Bifet, and F. Suchanek, "Bella: Black box model explanations by local linear approximations," in *AAAI*, **UNDER REVIEW**. 🔗 URL: https://arxiv.org/abs/2305.11311.

3. **N. Radulovic**, D. Boulegane, and A. Bifet, "Scalar-a platform for real-time machine learning competitions on data streams," *Journal of Open Source Software*, vol. 5, no. 56, p. 2676, 2020, **[code]**. 🔗 URL: https://joss.theoj.org/papers/10.21105/joss.02676.

4. D. Boulegane, **N. Radulovic**, A. Bifet, *et al.*, "Real-time machine learning competition on data streams at the ieee big data 2019," in *2019 IEEE International Conference on Big Data (Big Data)*, **[web-page]**, IEEE, 2019, pp. 3493–3497. 🔗 URL: https://ieeexplore.ieee.org/document/9006357.

Other projects

01.2018. – 02.2018.   🔖 Implementation of an Adaptive Random Forest for Data Streams (Python, scikit-multiflow) by "Adaptive random forests for evolving data stream classification" by Murilo et al., 2017, [code]

10.2017. – 11.2017.   🔖 Implementation of a regular expression parser (Python), [code]

06.2011. – 10.2011.   🔖 Speech recognition system (Matlab) - Bachelor thesis,
Advisor: Zeljko Djurovic

Skills

Data Science skills   🔖 Statistics and Probability, Linear Algebra, Python (pandas, scikit-learn, numpy, pyTorch, TensorFlow, nltk, spaCy), R, SQL, Matlab

Computer skills   🔖 Linux, Git, Microsoft Azure, Apache Spark, Apache Kafka, Excel, LaTeX, …

Misc.   🔖 **200 h of teaching in:** Machine Learning, Information Extraction, Databases, Big Data Processing, Natural Language Processing

Languages   🔖 **Serbian/Croatian:** Native
English: Fluent (C1)
French: Intermediate (B1)

Miscellaneous Experience

Awards and Achievements

2014   🔖 **Ranked among the best students in the promotion with an average grade of 9.44/10.0 in Bachelor and 10.0/10.0 in Master studies**
School of Electrical Engineering and Computer Science, University of Belgrade, Serbia.

Miscellaneous Experience (continued)

2007 – 2010   **Republic of Serbia Scholarship holder**.
Scholarship awarded to students who have a high academic record: 400 applicants / 75 awards.

Volunteering

04.2011. – 06.2011.   **Student Project Assistant** at School of Electrical Engineering, University of Belgrade, Serbia
My mission was to present, explain and evaluate project assignments for 2nd year students on Signals and Systems course.

References

Available on Request