Vítor Nascimento Lourenço

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In a Nutshell

I am currently a master candidate in Computing, with an emphasis on Artificial Intelligence, at the Computing Institute of Federal Fluminense University (IC/UFF). I hold a Bachelor's degree in Computer Science from the IC/UFF, and I hold an Informatics Technical Diploma from the Federal Center for Technological Education Celso Suckow da Fonseca (CEFET/RJ). My work is within the area of Computer Science, with an emphasis on Artificial Intelligence. My research interests rely on the following themes: machine learning over relational data, neural-symbolic integration, and knowledge representation.

Education

- **Master in Computing** — Niterói, Brazil
  Federal Fluminense University, Institute of Computing — *2019 - Present*
  - 2019-Present: National Council for Scientific and Technological Development Fellow
  - 2019-Present: Student member of Database Research Group from the Systems and Information
- **Bachelor in Computer Science** — Niterói, Brazil
  Federal Fluminense University, Institute of Computing — *2014 - 2018*
  - 2014-2018: Student member of Database Research Group from the Systems and Information Engineering Lab
  - 2014-2016: Founder and leader of Data Science Club - UFF
- **Informatics Technician** — Rio de Janeiro, Brazil
  Federal Center for Technological Education of Rio de Janeiro, School of Informatics and Computing — *2011-2014*
  - 2012-2014: Student member of Applied Computing Research Group

Experience

- **IBM Research** — Rio de Janeiro, Brazil
  Research Intern — *August 2018 - July 2020*
  - In the first year of internship at IBM Research, I support the development of learning-based solutions on knowledge engineering for natural resource challenges. Meanwhile, I develop the Python framework, called HKpy, for IBM Hyperlinked Knowledge Graph technologies. HKpy was the first asset in the research group to be published and maintained open-source (https://github.com/ibm-hyperknowledge/hkpy). During the second year of internship, I worked in a client's project, where I research and developed a system for managing cyclic machine learning workflows.
- **LDSOFT** — Niterói, Brazil
  Research Intern — *July 2017 - July 2018*
  - During my internship, I was mainly responsible for coordinating a project to develop a trademark image retrieval system using computer vision and pattern recognition techniques. Further, I was a member of the development team of a natural language processing system for trademark name matching.

Technical Skills

- **Languages**
  - Portuguese (Fluent - Native).
  - English (Advanced - Understanding, reading, writing, and speaking).
  - German (Basic - Understanding, reading, and writing).
- **Programming Languages**
  - Advanced knowledge in C, Python, and TeX.
  - Basic knowledge in R, and Java.
- **Data Science and Machine Learning Tools**
  - Advanced knowledge in NumPy, SciPy, Matplotlib, and Scikit-Learn.
  - Basic knowledge in Pandas, PyTorch, Tensorflow, OpenCV, and Airflow.
- **DevOps Tools**
  - Basic knowledge in Travis, Docker, and Kubernetes.

Accomplishments & Awards

- **Best Computer Vision/Image Processing/Pattern Recognition Main Track Paper Award**
  Conference on Graphics, Patterns and Images (SIBGRAPI), 2019.
- **Best Work Award in the Workshop of Undergraduate Works**
  Conference on Graphics, Patterns and Images (SIBGRAPI), 2019.
- **Master Fellowship**
  National Council for Scientific and Technological Development Fellowship, 2018.

Publications

- Moreno, M. ; **Lourenço, V.** ; Fiorini S. R. ; Costa, P., Brandão, R. ; Civitarese, D. ; Cerqueira, R. . *Managing Machine Learning Workflow Components*. International Journal of Semantic Computing (IJSC), v. 14(2), p. 295–309, 2020.
- Azevedo, L. ; Souza, R. ; Brandão, R. ; **Lourenço, V.** ; Costalonga, M. ; Machado, M. O. C. ; Moreno, M. ; Cerqueira, R. . *Adding Hyperknowledge-enabled data lineage to a machine learning workflow management system for oil and gas*. First Break, v. 38(7), p. 91-95, 2020.
- Moreno, M. ; **Lourenço, V.** ; Fiorini S. R. ; Costa, P., Brandão, R. ; Civitarese, D. ; Cerqueira, R. . *Managing Machine Learning Workflow Components*, In 2020 14th IEEE International Conference on Semantic Computing (ICSC), 2020.
- **Lourenço, V. N.** ; Silva, G. G. ; Fernandes, L. A. F. . *Hierarchy-of-Visual-Words: a Learning-based Approach for Trademark Image Retrieval*. In 2019 32nd Conference on Graphics, Patterns and Images (SIBGRAPI), 2019. p. 218-225.
- Souza, R. ; Azevedo, L. ; **Lourenço, V.** ; Soares, E. ; Thiago, R. ; Brandão, R. ; Civitarese, D. ; Brazil, E. V. ; Moreno, M. ; Valduriez, P. ; Mattoso, M. ; Cerqueira, R. ; Netto, M. A. S. . *Provenance Data in the Machine Learning Lifecycle in Computational Science and Engineering*. In: 2019 IEEE/ACM Workflows in Support of LargeScale Science (WORKS), 2019, Denver. 2019 IEEE/ACM Workflows in Support of Large-Scale Science (WORKS), 2019. p. 1.
- Fiorini, S. R. ; **Lourenço, V. N.** ; Santos, R. C. M. ; Costa, P. B. ; Moreno, M. . *Towards Leveraging the Music Industry with Hyperknowledge*. In: 2019 International Conference on Artificial Intelligence for Industries, AI4I, 2019, Laguna Hills. Proceedings of the 2nd International Conference on Artificial Intelligence for Industries (AI4I), 2019.
- **Lourenço, V.** ; Mann, P. ; Guimarães, A. ; Paes, A. ; Oliveira, D. . *Towards Safer (Smart) Cities: Discovering Urban Crime Patterns Using Logic-based Relational Machine Learning*. In 2018 International Joint Conference on Neural Networks (IJCNN), 2018. p. 1-8.
- Nery, M. ; Santos, R. ; Santos, W. ; **Lourenço, V.** ; Moreno, M. . *Facing Digital Agriculture Challenges with Knowledge Engineering*. In: 2018 First International Conference on Artificial Intelligence for Industries (AI4I), 2018, Laguna Hills. 2018 First International Conference on Artificial Intelligence for Industries (AI4I), 2018. p. 118.
- **Lourenço, V.** ; Mann, P. ; Paes, A. ; Oliveira, D. . *SiAPP: Um Sistema para Análise de Ocorrências de Crimes Baseado em Aprendizado Lógico-Relacional*. In 2016 XII Brazilian Symposium on Information Systems (SBSI), 2016. p. 168-175.
- **Lourenço, V. N.** ; Souza, U. ; Ogasawara, E. S. . *Utilização de Algoritmos Genéticos para a Elaboração do Quadro de Horários do Ensino Médio-Técnico Integrado do CEFET/RJ*. In ENCompIF - CSBC, 2014, Brasília. ENCompIF - II Encontro Nacional de Computação dos Institutos Federais, 2014. p. 1-4.