Terencio **AGOZZINO**

AWS Solutions Architect

Seneffe Metropolitan Area, Belgium

terencio.agozzino@gmail.com | (+32) 495 45 29 07 | terencioagozzino

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Summary

Highly motivated and detail-oriented engineer with a strong background in Cloud, particularly on AWS. I began my career as a Software Engineer and later transitioned into a Data Scientist role where I specialized in state-of-the-art techniques in Semantic Web and NLP. Through the work done by the Master's thesis at IDLab, the prestigious research center of imec, I have co-authored two research papers, following the `pyRDF2Vec` library implementation, widely cited in the scientific community. In my free time, I enjoy pursuing my passions for chess, piano, cycling, and writing.

Education

Haute École en Hainaut (HEH) — *Mons, Belgium*

Master, Computer & Systems Engineering — *September 2018 - June 2021*

Obtained a comprehensive education in engineering, including proficiency in database design, operating systems, and programming languages such as C and C++. Additionally, I gained knowledge in automation, electronics, and Machine Learning through my engineering curriculum.

Haute École en Hainaut (HEH) — *Mons, Belgium*

Bachelor, Networks and Telecommunications — *September 2015 - June 2018*

Gained knowledge in networks and telecommunications through studies of the latest standards offered by Cisco Systems.

Université de Mons (UMons) — *Mons, Belgium*

Bachelor, Computer Science — *September 2013 - June 2015*

Obtained a strong foundation in mathematical logic and refreshed my understanding of mathematics and physics. Through my studies, I also gained a deeper understanding of computer science, which enhanced my abilities in software development.

Certifications

2024	**AWS Certified DevOps Engineer – Professional (DOP-C02)**, Amazon Web Services (AWS)	*AWS02487783*
2023	**AWS Certified Solutions Architect – Professional (SAP-C02)**, Amazon Web Services (AWS)	*AWS02487783*
2023	**Microsoft Certified: Microsoft Azure Data Fundamentals (DP-900)**, Microsoft	*992366501*
2022	**Microsoft Certified: Microsoft Azure AI Fundamentals (AI-900)**, Microsoft	*992366501*
2022	**Professional Scrum Master™ I (PSM I)**, Scrum.org	*827516*
2022	**AWS Certified SysOps Administrator – Associate (SOA-C02)**, Amazon Web Services (AWS)	*AWS02487783*
2022	**AWS Certified Developer – Associate (DVA-C01)**, Amazon Web Services (AWS)	*AWS02487783*
2021	**AWS Certified Solutions Architect – Associate (SAA-C02)**, Amazon Web Services (AWS)	*AWS02487783*
2021	**Microsoft Certified: Azure Fundamentals (AZ-900)**, Microsoft	*992366501*
2021	**AWS Certified Cloud Practitioner (CFL-C01)**, Amazon Web Services (AWS)	*AWS02487783*
2021	**SCO-VCA**, BeSaCC-VCA	*BE000132FR205386*

Publications

pyRDF2Vec: A Python Implementation and Extension of RDF2Vec — *Springer Nature Switzerland*

Gilles Vandewiele, Bram Steenwinckel, **Terencio Agozzino** & Femke Ongenae — *May 2023*

Publication URL: `https://link.springer.com/chapter/10.1007/978-3-031-33455-9_28`

INK: Knowledge Graph Embeddings for Node Classification — *Data Mining & Knowledge Discovery*

Bram Steenwinckel, Gilles Vandewiele, Michael Weyns, **Terencio Agozzino**, Filip De Turck & Femke Ongenae — *January 2022*

Publication URL: `https://link.springer.com/article/10.1007/s10618-021-00806-z`

Skills

Fundamentals: AWS | Business Intelligence | CI/CD/CT | Computer Science | Cybersecurity | Data Structure | Knowledge Graphs | Linux | Machine Learning | Microsoft Azure | Natural Language Processing | Networking | REST APIs | Semantic Web | Scrum

Coding: Android | Angular | Bash | C | C# | C++ | Docker | Emacs Lisp | Flutter | GNU Emacs | Git | Java | JavaScript | LaTeX | MongoDB | Node.js | OpenGL | PHP | Python | PyTorch | React | Scikit-learn | TensorFlow | TypeScript | UML | Vue.js

Languages: **French:** Mother Tongue; **English:** Fluent; **Dutch:** Basic; **Italian:** Basic

Experience

Envalior (Former DSM)

Geleen, Netherlands

AWS Cloud Developer — *September 2022 - Today*

- Implemented data provisioning for multiple tables of SAP and B&W using Theobald jobs and creating AWS Glue Jobs and Crawlers for the raw, cleansed, and harmonized layers at the CDK level, enhancing data quality and availability for reporting and finance squads.
- Led the successful migration of manufacturing plants to AWS IoT Greengrass V2, leveraging CDK, GNU/Linux and Docker.
- Enhanced Microsoft SQL Server and OPC UA implementations for data collection form AspenTech, Siemens, and WonderWare servers.
- Actively contributed to the AWS Guild, collaborating with experts to resolve AWS-related challenges.
- Assisted in a large-scale migration from DSM's AWS environment to Envalior's landing zone.
- Applied the Scrum framework to utilize the Agile methodlogy.
- Utilized AWS IoT Greengrass, AWS Glue, AWS Lambda, AWS CodeCommit, AWS CloudFormation, AWS Code Pipeline, AWS CodeBuild, AWS CodeDeploy, AWS SDK, AWS Secrets Manager, Amazon S3, Amazon Athena, Python, PySpark, GNU/Linux, Docker, CyberArk, and Theobald Software.

SoccerLAB

Hasselt, Belgium

Software Engineer — *August 2022 - September 2022*

- Conducted a Proof of Concept to evaluate the performance and stability of Svelte compared to React and Angular.
- Applied the Atomic design methodology to improve the development of the User Interface, increase stability, and enhance the consistency of the digital experience.
- Created component documentation using Storybooks.
- Implemented Tailwind CSS to facilitate development for various screen sizes and reduce CSS code.
- Incorporated the Carbon Design System as a component library.
- Utilized Svelte, SvelteKit, TypeScript, Storybook, Tailwind CSS, Carbon Design System, Jira, and Bitbucket in project work.

Datavillage

Liège, Belgium

Data Scientist — *January 2022 - April 2022*

- Evaluated Knowledge Graphs based on metrics such as purity rate, deployment time, usage, and cost.
- Conducted a Knowledge Graph migration to enhance the recommendation system for end users.
- Improved the recommendation system performance by minimizing HTTP latency related to SPARQL queries and reducing the algorithmic complexity of Cypher queries and Python implementations.
- Refactored an existing code base to adhere to good architectural practices and design patterns.
- Provided recommendations for improving the implemented AWS Cloud architecture.
- Utilized Python, Jupyter Notebook, Neo4j, DBpedia, Wikidata, and Git in project work.

IDLab – imec

Ghent, Belgium

Machine Learning Intern — *February 2021 - June 2021*

- Developed `pyRDF2Vec`, a state-of-the-art API to facilitate development in the scientific community, choosing appropriate architecture and design patterns, as well as the implementation of linters, Continuous Integration (CI), Continuous Delivery (CD), and Continuous Testing (CT).
- Improved the processing time of Knowledge Graphs by introducing optimization mechanisms such as the use of cache memory to reduce HTTP latency, multiprocessing, cache prefiling, and the use of appropriate data structures and a connection pool.
- Added basic literal support to increase the model accuracy.
- Developed an online learning solution to prevent the need for complete retraining of the model on the Knowledge Graph, but only update with new data added to the Knowledge Graph.
- Implemented and evaluated BERT and other recent embedding techniques within RDF2Vec as part of my Master's thesis.
- Utilized Python, Jupyter Notebook, Google Colab, LaTeX, Mattermost, and Git in project work.

Open Summer of Code

Brussels, Belgium

Developer (Student Job) — *July 2020 - August 2020*

- Developed a web application that uses `RML.io` to generate high-quality Linked Data for creating Knowledge Graphs.
- Led a student team in the execution of the project.
- Applied the Scrum framework to utilize the Agile methodology.
- Utilized React, Node.js, JavaScript, Docker, Slack, and Git in project work.

Open Summer of Code

Brussels, Belgium

Developer (Student Job) — *July 2018 - August 2018*

- Developed the web application of Prisma, which has since become `Soulcenter`.
- Conducted a project analysis to address the needs of end users.
- Applied the Scrum framework to utilize the Agile methodology.
- Utilized JavaScript, Vue.js, Laravel, Slack, and Git in project work.

Centre de Recherche de la Haute École en Hainaut (CReHEH)

Mons, Belgium

Trainee Developer — *February 2018 - May 2018*

- Designed an API and a CLI for the Haute École en Hainaut as part of my Bachelor's thesis.
- Enhanced visual recognition and motion of the NAO robot through image processing.
- Created interaction scenarios with the NAO robot to engage with vulnerable children (e.g., children with autistic and behavioral disorders).
- Utilized Python, OpenCV, and Git in project work.

Honors & Awards

2021 **Honorable Mention**, 7th Cyber Security Challenge Belgium — *Brussels, Belgium*
2020 **Honorable Mention**, 6th Cyber Security Challenge Belgium — *Brussels, Belgium*
2020 **Honorable Mention**, 3rd WIRE.HACK Hackaton — *Kortrijk, Belgium*

Presentations

3rd Edition of the Cybersecurity Day by the Haute École en Hainaut

Mons, Belgium

Presenter for <BERT is All You Need> — *December 2020*

- Introduced RNN, the Transformer architecture, and BERT.
- Compared the effectiveness of BERT and other classification algorithms for detecting spam SMS using two Kaggle datasets.

2nd Edition of the Cybersecurity Day by the Haute École en Hainaut

Mons, Belgium

Presenter for <New Vulnerabilities in 4G/5G Networks> — *December 2019*

- Contributed to public awareness of digital security.
- Provided an overview of User Equipment (UE), Evolve NodeB (eNodeB), and Mobility Management Entity (MME) device types.
- Explained the Long Term Evolution (LTE) registration process.
- Described identification, Bidding-Down, and Depletion-of-Battery attacks.

References

Prof. Dr. Femke Ongenae — *Master's Thesis Advisor*
Assistant Professor · Ghent University — *femke.ongenae@ugent.be*
(+32) 485 52 55 63

Dr. Ir. Gilles Vandewiele — *Master's Thesis Supervisor*
Chief Technology Officer · Optioryx — *gilles.vandewiele@optioryx.com*
(+32) 479 85 89 17

Dr. Ir. Bram Steenwinckel — *Master's Thesis Supervisor*
Postdoctoral Researcher · IDLab, UGent – imec — *bram.steenwinckel@ugent.be*
(+32) 479 75 39 51