Guilherme Ilunga

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Education

Master Degree in Information Systems and Computer Engineering, Instituto Superior Técnico, University of Lisbon   *Sep. 2016 – Feb. 2019*

- Master Thesis: Single-Objective Optimization for Architecture, advised by Professor António Leitão in the Algorithmic Design for Architecture group

- Specializations in Intelligent Systems and Software Engineering

- Relevant coursework and grades: Decision Support Systems (20/20), Information Processing and Retrieval (18/20), Master Thesis (20/20), Natural Language Processing (19/20), Learning and Intelligent Decision-Making (20/20)

Bachelor Degree in Information Systems and Computer Engineering, Instituto Superior Técnico, University of Lisbon   *Sep. 2013 – Jul. 2016*

- Academic Excellence award for the 2015/2016 academic year

- Relevant coursework and grades: Artificial Intelligence (18/20), Compilers (18/20), Distributed Systems (17/20), Probabilities and Statistics (16/20)

Experience

Research Software Engineer II, All Data AI, Microsoft Research Cambridge   *Sep. 2019 –*

- Responsibilities: implementing Deep Learning models in Pytorch, designing experiments, and supervising AI Residency and internship projects

- Main Experience:

  - Computer Vision for Hardware Systems and Optics

  - Convolutional Neural Networks for Video Classification

  - Recurrent Neural Networks and Transformers for Code Autocompletion

  - Generative Adversarial Networks and Variational Autoencoders for Mesh Generation

AI Resident, Microsoft Research Cambridge   *Sep. 2018 – Sep. 2019*

- Main Experience:

  - 3D Convolutional Neural Networks for Medical Image Segmentation (work done in collaboration with the MSR Cambridge Healthcare and InnerEye teams)

  - Recurrent Neural Networks for Smart Replies with multimedia content (work done in collaboration with the Microsoft Bellevue team)

Teaching Assistant, Instituto Superior Técnico, University of Lisbon   *Sep. 2017 – Jul. 2018*

- Teaching Assistant Grant for the Operating Systems and Distributed Systems courses

- Helped create and evaluate several assignments related with Multi-Threading/Processing in C and Java WebServices

- Received Teaching Excellency Awards

Internship, Spoken Language Systems Lab, INESC-ID   *Jul. 2016 – Sep. 2017*

- Research related with Machine Learning and Natural Language Processing for Poetry Generation, advised by Professor David Martins de Matos

- Implemented character and word level Recurrent Neural Networks using Tensorflow

Summer Internships, Link Consulting   *Jul. 2015 – Sep. 2015 and Jul. 2016 – Sep. 2016*

- Developed OutSystems and .NET apllications applications with integrated .NET Web Services for insurance companies

Publications

- Ilunga, G. and Leitão, A. (2018). *Derivative-free Methods for Structural Optimization*. In Education and Research in Computer-Aided Architectural Design in Europe Conference.

- Caetano, I., Ilunga, G., Belém, C., Aguiar, R., Feist, S., Bastos, F., and Leitão, A. (2018). *Case studies on the Integration of Algorithmic Design Processes in Traditional Design Workflows*. In International Conference of the Association for Computer-Aided Architectural Design Research in Asia.

Other Contributions

JSON-Configparser (Python package)   *May 2019*

- Python library to parse and validate JSON configuration files

- The user can specify the type, bounds, defaults, and extra validations of each argument using Typed NamedTuples

- NamedTuple argument object allows typed auto-completion using an IDE, unlike dictionaries

- Useful for validating arguments before running a long process (e.g., training a Neural Network)