Pedro Ramos Kobori — Software developer

Campinas, São Paulo, Brazil | pedro.kobori@gmail.com | Github | LinkedIn | Portfolio

Skills

- **Programming**: Python, SQL, Excel, LaTeX, RegEx, Ruby, Julia, Assembly, SML, Racket, UML.
- **Technologies**: NumPy, Pandas, TensorFlow, Docker, Pytest, GitHub, Spark, Neo4j, Splunk, Knime.
- **Web Development**: Plotly Dash, HTML, CSS, GitHub Actions, Javascript, Matplotlib.

Projects

Big data specialization, Project Code.

- Performed data exploration with Splunk for item market sales performance analysis.
- Created a classification model workflow with Knime for assigning labels to high spending users.
- Used K-means clustering with Spark (PySpark) for user-segment analysis.
- Used chat data modelling with Neo4j for recommending targetted marketing campaigns.

Productivity autotracker, Project Code.

- Implemented activity tracking logic and event categorization in Python to determine user productivity.
- Used SQL databases to keep track of user data, trends, settings and milestones.
- Made the interface and configuration using Plotly Dash, with easily configurable user settings.

Machine learning specialization, Project Code.

- Created neural networks for image classification, collaborative filtering for movie recommendation.
- Created anomaly detection for server operations, reinforcement learning for lunar lander.
- Created clustering for image compression, decision trees for mushroom recognition.
- Performed model analysis, data engineering and data visualization to various real-world ML problems.
- Technologies: NumPy, TensorFlow, Keras, Scikit-Learn, Matplotlib, Pandas, OpenAI gym.

Hack computer design and game implementation, Project Code.

- From a NAND gate abstraction and some emulation tools, I implemented the Hack computer software.
- Implemented the theoretical hardware architecture using HDL.
- Implemented an assembler, to transform assembly files into Hack files (binary code for the Hack platform).
- Implemented a translator, translates VM code (stack based operations) into assembly.
- Implemented a compiler, to compile Jack files into VM code.
- Finally, I implemented a Jack OS and a Jack game.

DNA sequence analysis using alignment and scoring matrices, Project Code.

- Implemented functions to create alignment and scoring matrices for quantifying similarity in 2 DNA sequences.
- Did statistical hypothesis testing with Z-scores of multiple local alignments with one random sequence.
- Implemented functions to quantify dissimilarity between 2 strings for spelling check using edit distances.

Computer network resilience analysis, Project Code.

- Analyzed the connectivity of a computer network by randomly disabling computers on the network.
- Compared the resilience of a provided graph and randomly generated ER and UPA graphs (DPA graph variety).
- Implemented and compared (time complexity) 3 algorithms for removing computers from the network.
- Analyzed how the largest connected component changed depending on the graph creation algorithm.

Education

- Currently studying by the Open Source Society University (OSSU) computer science path. See earned certifications on my portfolio. The OSSU curriculum is a complete education in computer science using online materials. It is designed according to the curriculum guidelines for undergraduate degree programs in computer science, by IEEE.
- Native portuguese, fluent english: Cambridge Advanced English Level 2 Certificate in ESOL International.