DAMIANO CARRIOLI

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Sr. Software Engineer, Visa Inc.

Education

Master of Science, Computer Science **Los Angeles, CA**

University of Southern California

GPA 3.462

Bachelor of Science, Computer Science, Minor in Mathematics **Los Angeles, CA**

University of Southern California

Magna Cum Laude, GPA 3.75

Experience

Sr. Software Engineer **SEP 2022-PRESENT**

Visa Inc. (Foster City, CA)

Designed, developed, and tested new features for Visa's B2B connect platform, the non-card based, end-to-end payment eco-system for businesses: visa-b2b-connect.html. Tech stack: Java, Python, MySQL, Spring Boot.

Graduate Researcher **JAN 2022-MAY 2022**

FPGA/Parallel Computing Lab (USC)

Designed, developed, and tested a novel tensor decomposition algorithm using FPGAs and GPUs to improve performance and reduce power consumption compared to industry-standard libraries (PyTorch, TensorFlow, SciPy).

Software Engineering Intern (Paid) **MAY 2021-AUG 2021**

Visa Inc. (Foster City, CA)

Designed, developed, and tested a natural language virtual assistant that performs answer selection given a question and a set of answer candidates. Leveraged the tool to retrieve information about payment status and account balances. Also implemented custom scripts and APIs to interface with the company's databases to retrieve relevant data.

Projects

Generative Deep Learning MNIST reconstruction (JAX)

Developed an autoregressive model that reconstructs MNIST images by predicting the remaining pixels from a given subset, similar to how a language model predicts text.

Generative Deep Learning for Payments Forecast (JAX)

Developed an autoregressive transformer for Visa's B2B Connect platform to predict future payments and forecast faulty payments due to insufficient funds.

Deep Learning for Cancer Detection (JAX)

Developed and compared different deep learning models, including Vision Transformer (ViT) and fully convolutional U-net on the PatchCamelyon (PCam) dataset for histopathological cancer detection.

CAS for Boolean Logic Simplification

Employed SymPy to streamline Boolean logic simplification replacing traditional, declarative, if-else statements thereby facilitating addition and modification of rules as well as testing and deployment efforts.

Skills

Deep Learning

Proficiency in Python and extensive experience working with low level deep learning frameworks in the JAX ecosystem: Optax, Equinox, CommonLoopUtils, Jax-Metal, Kfac-Jax. Expert in PySpark which I use for data cleaning.

Parallel Programming

Familiarity with various parallel programming paradigms, including CUDA, OpenMP for C and C++, Message Passing Interface (MPI), and Python libraries such as Cupy, Numba, and PySpark.

Activities

D1 Track & Field

Undergraduate D1 pole vaulter for the USC Trojans, PR: 4.51 m.