Damian Diago D'monte

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Education

University of New Brunswick — Fredericton, NB
Master of Computer Science, 4.2/4.3 CGPA — *Sep. 2019 – Aug 2021*

Fr. Conceicao Rodrigues College of Engineering, University of Mumbai — Mumbai, MH
Bachelor of Engineering (Computer Engineering), 7.98/10 CGPA — *Jul. 2013 – May 2016*

Technical Skills

Languages — C/C++, Pro*C, Java, Racket, Python, R, LaTeX, WebAssembly, JavaScript, HTML/CSS, SQL
Developer Tools — Git, Docker, GitLab CI/CD, VSCode, CMake, GDB, Valgrind, Perf, Putty, Eclipse, PL/SQL Developer, R Studio
Methodologies — OOPS, UML, SDLC - Incremental Model, Agile Model - SCRUM and Extreme Programming.

Experience

Graduate Research Assistant — Sep 2019 – Present
UNB/IBM Center of Advance Studies — Atlantic | Project — OMR in Resource Constrained Env. — *Fredericton, NB*
Technology Stack — C++, GitLab CI/CD, VSCode, Docker, GDB, Linux, Perf, Valgrind

- Accelerated the execution time of a WebAssembly compiler (wabtaot) by detecting the overhead causing functionality.
- Contributed the shared cache C++ code to the **open-source** Eclipse OMR code base.
- Implemented a generic ELF-based shared object generator, in C++, which stores Eclipse OMR ahead-of-time (AOT) compiled code.
- Developed GitLab CI/CD pipelines to automate the build and test processes.
- Conducted performance analysis of the shared cache and the ELF shared object code containers on metrics like execution speed, memory footprint, I/O utilization, file size, code sharing and concurrency.

Software Developer — Jan. 2017 – Aug. 2019
Tata Consultancy Services Limited | Project — TCS BaNCS Securities Trading - Front Office — *Mumbai, MH*
Technology Stack — Pro*C, C++, Putty, SVN, GDB, Linux, Bash Scripting, PL/SQL Dev., SCRUM

- Developed enhancements and resolved multiple defects/bugs impacting over a million customers for premier institutional and retail clients: **BNP Paribas, Investec, Nomura, HSBC, HDFC Securities & Axis Securities**.
- Successfully deployed TCS BaNCS Securities Trading (FNO) on UAT/SIT/Production application server's at BNP Paribas, supported UAT/Fidessa testing, delivered immediate fixes, and transitioned the product to LIVE.
- Implemented bash scripts to automate application startup, sanity checks, backup up data, market open and close activities, etc.
- Worked with cross-functional teams to ensure fulfillment of product requirements, evaluated product performance and transitioned patches from development to commercialization.
- Acted as a customer liaison on technical issues related to product integration and deployment.
- Provided production support (onsite/off-site) to institutional and retail trading desks during critical market hours.

Academic Projects

Mark & Sweep Garbage Collector | *C++, Git, CMake* — Aug 2019 – Dec 2019

- Implemented a heap management system to simulate object allocation via inputting trace files.
- Developed Mark and Sweep garbage collector in C++ prototype to perform mark/sweep operations on heap objects.
- Detected and deleted 99% of dead objects and displayed CLI statistics post garbage collection.

NominalGDP Predictor | *R, ggplot, Tidyverse, Git* — June 2020 – Present

- Assembled a dataset of major economic indicators from multiple online and official sources.
- Performed exploratory data analysis on the dataset and trained it using linear regression and the random forest model.
- Predicted the Nominal GDP (of Canada) for the years 2018, 2019 and 2020 with 95%+ accuracy.

Cost Based Optimizer for a Big Data/Data Science System | *Python, Pandas, DaskDB* — Jan 2020 – Apr 2020

- Researched into cost based optimzers and created a prototype of it for the DaskDB data science system.
- Developed a statsGather utility using Python and Pandas to gather different types of database statistics.
- Implemented the functionality to generate physical plans from a logical plan, and calculated the cost of each plan.

Malware Detector | *Java, JSwing, Git* — Aug 2015 – May 2016

- Performed binary analysis on PE-executables and applied an n-gram based approach to finalize a binary feature set.
- Applied SVM classification for modelling, which classified the executables as either malicious or benign.
- Designed and developed a GUI using JApplets/JSwing to automate the training, validation and prediction.

Awards & Achievements

Research fellowship grant of 23,000 CAD/yr by IBM CAS-Atlantic on the Eclipse OMR project. — Sep 2019 – Aug 2021
Recipient of awards like, "Star of the Month" and "Star Team Award", for remarkable performance at TCS. — Nov 2017 & Jan 2018
Elected as the Secretary of UNB Computer Science Graduate Students Association. — Nov 2020 – Present

Publications

An ELF-based storage option for the eclipse OMR ahead-of-time compiler, In Proceedings of the 30th Annual International Conference on Computer Science and Software Engineering (CASCON '20), ACM Digital Library, IBM Corp., USA, 173–178.