**JOEL THOMAS CHACKO**

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**PROFESSIONAL SUMMARY**

An industrious gold medalist in computer science with over 2 years of software development experience in leveraging technology to drive innovation. A published Machine Learning researcher and active maintainer of a self-authored open-source Python module with over 12k installations. With strong teamwork skills and a drive to stay at the forefront of technological advancements, I aim to leverage my expertise to significantly contribute to the tech landscape.

**EDUCATION**

**M.Sc., DATA AND COMPUTATIONAL SCIENCE**

University College Dublin (UCD)|Sept 2024 - Present

* Modules include ML and AI, Regression and Statistical Analysis, Statistical Machine Learning, R, Python, Probability, and Statistics.

**B.E., COMPUTER SCIENCE AND ENGINEERING |** GPA: 9.89/10, Gold Medalist

MVJ College of Engineering |Sept 2019 – Sept 2023, India

* Modules included Machine Learning and AI, Data Structures and Algorithms, Object Oriented Software Engineering, Theory of Computation, Deep Learning, and Differential Equations, Software Development Methodologies
* Authored and published three research papers, including one in the prestigious [IEEE journals](https://ieeexplore.ieee.org/document/10111896).

**SKILLS**

**LANGUAGES |** Python • C++ • Go • R

**DATABASE TECHNOLOGIES |** MySQL • S3 • PostgreSQL • Spark • RDS

**FRAMEWORKS & TOOLS |** Flask • Django • Numpy • Pandas • Agile • Selenium • Restful APIs

**CLOUD TECHNOLOGIES |** AWS (Lambda, S3, EC2, RDS) • Azure • IBM Cloud

**CICD TOOLS |** Jenkins Automation • Docker • Kubernetes • OpenShift • GitHub Actions

**DATA ANALYTICS TOOLS |** Power BI

**SOFT SKILLS |** Deliver Results • Bias for Action • Team Player • Self-Initiator• Eager to Learn

**PROFESSIONAL EXPERIENCE**

**TALLY SOLUTIONS PVT. LTD. |** May 2023 - Aug 2024

**Software Test (Operations) Engineer | *Python, AWS, Open Generative AIs, LLMs, Prompt Engg., Docker, K8s***

* Led the initial feasibility research and directed the migration of Jenkins from Windows to a Dockerized Linux environment on AWS, resulting in a projected 40% improvement in deployment efficiency and a 70% reduction in operational costs.
* Ensured 100% up-time of dockerized Dev, Staging, and Production Jenkins servers on Amazon EC2 Instances, mitigating data loss risks by 100% using AWS ECS & EKS facilities.
* Boosted workflow execution times by 99.35% using Python Multi-Pool Executor & AWS Compute Services and optimized MySQL in-code pings by 99% using Redis-like functionalities in Python.
* Designed solutions with Prompt Engg. with Generative AI (OpenAI APIs)-LLMs, and ML clustering models to automate test script writing processes, and improve automatic failure classification tasks. Used Selenium to automate web testing.
* Published a Python open-source module - [Context-Aware-Jenkins-Job-Transfers](https://context-aware-jenkins-transfers-documentation.readthedocs.io/en/latest/) to enhance workflow efficiencies by over 80% with the help of several multi-disciplinary mentors.

**AI ROBOSOFT PVT. LTD. |** Feb 2023 - Apr 2023 **AI and ML Intern | *Python, R, Kaggle, ML Clustering, TensorFlow, PyTorch, ResNet Architectures***

* Collaborated on state-of-the-art projects in AI and ML at AI Robosoft, with a focus on healthcare applications.
* Developed and implemented ML models for specific applications, utilizing Python and frameworks like TensorFlow and PyTorch. Utilized various algorithms (e.g., VGG19, ResNet50) to train models and optimize performance.

**OPEN SOURCE CONTRIBUTIONS**

**CONTEXT-AWARE JENKINS JOB TRANSFERS | *Python, CI/CD |*** [Documentation](https://context-aware-jenkins-transfers-documentation.readthedocs.io/en/latest/)

* Authored and maintain ‘Context-Aware Jenkins Job Transfers’, a tool which provides a Pythonic way of transferring jobs and its associated views and plugins between 2 Jenkins servers.
* Users now transfer jobs along with their associated views and plugins improving workflow efficiencies by 80%.

**NOVEL SCHEDULING ALGORITHM USING ML TECHNIQUES (K-MEANS) | *ML Models, Strategy |*** [GitHub Repo](https://github.com/joelkariyalil/Scheduling-Algorithm-for-StreamIt)

* Engineered a novel Scheduling Algorithm leveraging K-means clustering, to analyze, and categorize users with similar network bandwidths into distinct groups.
* Significantly enhanced time and space efficiencies of the algorithm to O(n) from O(n3).

**BROWSER FOR LOCAL MACHINE – WIP | *C++, Cmake, ML Models, NLP |*** [GitHub Repo](https://github.com/joelkariyalil/Loggle)

* Engineering a browser for local machines to have browser-like capabilities, which would enable the users to search for files using natural language, and perhaps even images. *(Prompt – ‘List out the Pictures that I took on the 14th of May”)*
* Utilizing C++ libraries for Machine Learning like TensorFlow APIs for C++, NLP Models, Graphs.

**LEADERSHIP AND EXTRACURRICULARS**

* Conducted Tech-Talks for Tech Societies (Git, Multi-Threading) (2023) & Tech-Mentor MVJCE
* Open Source Python Module – Author & Maintainer (2024) PyPI
* School Captain & Sports Vice Captain (2017) NMS
* Church Newsletter’s Editor-in-Chief & Program Coordinator

**RESEARCH PUBLICATIONS**

* Peer-to-Peer File Streaming Using Web Sockets Protocol (IEEE) [Show Publication](https://ieeexplore.ieee.org/document/10111896)
* Comparative Study of Regression Models using Case Study of Limited Data (IJIRCCE) [Show Publication](https://ijircce.com/admin/main/storage/app/pdf/wSRgiWMYmpdb6s1bk6dCjpTknLYCPhw70Q8ZVKw6.pdf)
* Personalized Route Selection using Machine Learning (IJIRCCE) [Show Publication](https://ijircce.com/admin/main/storage/app/pdf/6YKC1w8iTTPavrwApxHP4dtReOKpIcpmk6ejZUNZ.pdf)

**AWARDS AND ACHIEVEMENTS**

* Star of the Quarter Nomination (2024)                          Tally Solutions Pvt. Ltd.
* Spot Award for Excellence (2024)                                        Tally Solutions Pvt. Ltd.
* Achieved the top rank among over 900 students across all departments at MVJCE MVJCE
* Meritorious Student Award, Scholarship recipient (2019-2023) MVJCE
* Tri-Continental Hackathon Runner-Up at Notre Dame, US UCD

**CERTIFICATIONS**

* IBM Digital Credential – Container & Kubernetes Essential V2 (Containers, K8s, OpenShift) IBM Cloud
* Advanced C++ Training (2022) IIT Bombay
* Java Training (2022) IIT Bombay
* Supervised Machine Learning: Regression and Classification (2023) Coursera
* Full Stack Data Scientist (2023) Coursera

**INTERESTS**

* **INTERESTS:** Comedy Sketch Writing, Debating, Reading, Playing Guitar, Cycling, Playing Polyrhythms.
* **LANGUAGES:** Malayalam, Kannada, Tamil, Hindi, English