

Abdul Rehman Mohammad

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Profile

Highly motivated and accomplished software engineer proficient in the entire technology stack. Demonstrated expertise in developing scalable applications leveraging distributed databases. Possess strong competency in actively utilizing Python, JavaScript (Node.js), TypeScript, and Java programming languages.

Work Experience

Software Engineer Australian Broadcasting Corporation (ABC)

06/2022 – present MELBOURNE, VICTORIA, AUSTRALIA

- Enhanced and maintained ABC's digital API platforms to successfully deliver data aggregation and content delivery services for ABC digital products.
- Ensured reliable provision of external data as a service to content editors and digital platforms, even during periods of high traffic and spikes in traffic.
- Significantly optimized systems to minimize compute costs, resulting in an exceptional 99.5% uptime during critical events such as state and federal elections and emergencies.
- Developed and implemented a successful refactoring of the data feed ingestion services by migrating from Elastic Container Services to AWS Lambdas, resulting in enhanced efficiency and cost reduction.
- Integrated additional API routes to enhance the delivery of geospatial data in the ABC emergency web application, using geohashing. The goal was to accommodate a higher number of concurrent users and minimize response latency. Successfully increased the application's capacity to handle concurrent users by nearly 100 times, resulting in improved performance.

Student Project Supervisor University of Melbourne

07/2021 – 06/2022 MELBOURNE, AUSTRALIA

- Successfully supervised student projects for the Software Project subject (COMP90082), a pivotal component of the Master's of Information Technology degree.
- Demonstrated exceptional leadership skills in overseeing student teams throughout the entire project lifecycle.
- Effectively guided and mentored students, ensuring the timely completion of project milestones and deliverables.
- Implemented effective communication strategies to facilitate seamless information flow between students, faculty, and external stakeholders.
- Evaluated project outcomes and provided constructive feedback to promote continuous improvement and excellence.

Software Engineer University of Melbourne

01/2021 – 06/2022 MELBOURNE, VICTORIA, AUSTRALIA

- Supported the development, support, and delivery of research-oriented IT systems at the University of Melbourne.
- Developed web applications using full-stack technologies (MERN and LAMP) to meet specific research requirements.
- Utilized container orchestration tools (Docker, Kubernetes) for development and deployment, hosting applications on the NeCTAR cloud service.
- Completed the Living Instruments application, a collaborative project preserving and transforming historic instruments into playable virtual instruments.

Work Experience

- Used Reactjs and Tonejs for the Living Instruments application's development.
- Managed backend maintenance for <https://scorh.org/>, including PostgreSQL database administration and backend API development in Java Spring.
- Completed development of Cardio Engine, a platform for mining targets for heart disease treatment, using React, d3.js, and three.js on an Express server hosted on the Nectar Research Cloud. Contributed to the Australian Digital Observatory project, employing big data technologies (CouchDB, Knative functions, Kubernetes) for machine learning on large datasets (>50GB) and building a REST API using Apache Camel K for integration with serverless functions.

AI/Machine Learning Trainee Engineer Outotec

11/2019 – 03/2020 MELBOURNE, AUSTRALIA

- Tasked with writing machine learning and artificial intelligence software for communication with an advanced process controller via inter-process communication (sockets).
- Developed AI-based software for predicting greenhouse gas emissions using known input variables and providing recommendations through the advanced process controller.
- Created an 'online' learner utilizing deep neural networks and weighted ensembles to generate the most accurate models, ensuring continuous optimization of predictions.
- Applied Object-Oriented Programming principles in Python to develop software interfacing with simulations in the Outotec ACT platform.
- Implemented socket programming principles for effective inter-process communication between different software programs.
- Communicated results to internal stakeholders (senior management) and external clients.
- Utilized key programming libraries including Pandas, scikit-learn, and TensorFlow (Python) for software development and machine learning tasks.

Education

Information Technology | Master's degree University of Melbourne

01/2019 – 12/2020

Achieved 90% (H1) in Distributed Systems (COMP90015)

Achieved 88% (H1) in Cloud and Cluster Computing (COMP90024)

Achieved 81% (H1) in Advanced Database Systems (COMP90050)

Achieved 84% (H1) in Research Project (COMP90055)

Medicinal and Pharmaceutical Chemistry | Bachelor's Degree University of Melbourne

01/2012 – 12/2015

Languages

English
Professional

Urdu
Professional

Publications

Mapping the Chatter: Spatial Metaphors for Dynamic Topic Modelling of Social Media

The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences

08/2022

<https://doi.org/10.5194/isprs-archives-XLVIII-4-W1-2022-315-2022>

The Australian Digital Observatory: Social Media Collection, Discovery and Analytics at Scale Big Data Intelligence and Computing

05/2023

https://doi.org/10.1007/978-981-99-2233-8_23

Publications

Lifting the hood on how the ABC combines weather, emergency and location data

Australian Broadcasting Corporation

09/2023

<https://www.abc.net.au/digital-product/how-the-abc-combines-weather-emergency-and-location-data/102756766>

Volunteering

Administrative Assistant

Aga Khan University

11/2011 – 01/2012

Volunteer

Australian Conservation Foundation

10/2015 – 11/2017

Certificates

JSNAD: OpenJS Node.js Application Developer

The Linux Foundation

02/2024

<https://www.credly.com/badges/549dbc5b-88ec-454d-8287-272675e33cda>

Learn TypeScript Course

Codecademy

09/2022

<https://www.codecademy.com/profiles/ajax-surfer-2Qaos/certificates/56fb1e71303e37b643bb1905f31c8a09>

Migrating from REST to GraphQL

LinkedIn

06/2022

<https://www.linkedin.com/learning/certificates/3985001bd85030a4d95a5e08bcd1023b3af6471ee929cfd31d94f4ed8a8ac55c>

Node.js: Security

LinkedIn

06/2022

<https://www.linkedin.com/learning/certificates/bfe66977147a1cfbc82a2acb937b694a759618ee8cd3f444d8fdc2eaf35b09be>

Become a RESTful API Developer

LinkedIn

10/2021

<https://www.linkedin.com/learning/paths/become-a-restful-api-developer>

Learning Functional Programming with JavaScript ES6+

LinkedIn

08/2021

<https://www.linkedin.com/learning/learning-functional-programming-with-javascript-es6-plus>

Node.js Essential Training: Web Servers, Tests, and Deployment

LinkedIn

08/2021

<https://www.linkedin.com/learning/node-js-essential-training-web-servers-tests-and-deployment>