Luqman R. **Bachtiar**

Data Engineer

Auckland, New Zealand

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Skills and Attributes

Languages	Native in English and fluent in Bahasa Indonesia.
Programming Languages	MATLAB, Python, R, SQL, Shell, PySpark, Git.
Analytical Skills	Machine learning, mathematical modelling and insight generation.
Analytical Tools	Apache Spark, Juptyer notebook, Keras (TensorFlow backend).
Data Skills	Data wrangling and data pipeline architecture.
Data Management Tools	SQLite, Oracle Database, Microsoft SQL Server, SQL Server Integration Services.
Amazon Web Services	EC2, RDS, ELB and VPC deployment, configuration & management.
Visualisation & Reporting	Tableau, Excel, SQL Server Reporting Services.
Ways of Working	Software Development Life Cycle from inception to implementation using Agile methodologies.

Experience

Fonterra Co-operative Group Limited

Auckland, New Zealand

Data Engineer — *June 2018 - Present*

- Produced advanced analytics insights through exploratory and predictive analytics of big trade, manufacturing and sales data.
- Designed, implemented and deployed a big data pipeline.
- Created mathematical models to perform descriptive and predictive analytics on the data.
- Surfaced the data model outputs to a user-friendly Tableau dashboard for the end-user (Sales Managers).
- Managed stakeholder engagement and translation of the mathematical analysis.
- Fascilitator of the Centre of Excellence Data Science team's agile development (Scrum Master)
- Projects include:
  - Global Sales and Account Opportunity Pipeline Dashboard
  - Vehicle Life Extension Model
  - Coffee Roulette - An Employee Socialising Application

Programming Languages: Python, SQL, R, Shell
Databases and Tools: Microsoft SQL Server, SQL Server Integration Services, SQLite
Big Data Tools: Apache Spark
Machine Learning Tools: Keras (TensorFlow backend)
Visualization Tools: Tableau, Excel
Development Tools: Git, AWS Cloud Computing Services
Other Tools: Agile development methodology, Atlassian suite (Jira, Confluence)

St John New Zealand

Auckland, New Zealand

Health Integration Analyst — *January 2018 - May 2018*

- Undertook data mining, data integrity/quality validation and analysis.
- Provided analytics support, optimisation and performance monitoring of BI data systems, especially around data quality variables.
- Projects include: Automated Referral System of High-Risk Patients

Programming Languages: SQL, Python
Databases and Tools: Microsoft SQL Server, Excel, SQL Server Reporting Services

Orion Health

Auckland, New Zealand

Solution Engineer — *November 2015 - January 2018*

- Managing and maintaing the Amazon Web Service stack/cluster deployment of the Amadeus product.
- Data ingestion curation and management of health language standard documents (HL7, CDA and FHIR messaging standards).
- Solutioning and supporting site-teams with software updates to the product line.
- Data insights and surfacing of analytical results from Oracle and Microsoft SQL Server databases.

Programming Languages: Javascript, Python, SQL, Shell
Databases and Tools: Cassandra (NoSQL), Oracle Database, Microsoft SQL Server
Development Tools: Git, SoapUI
Platform: Amazon Web Services
Other Tools: Agile Development Methodology, Atlassian Suite (Jira, Confluence), Technical Documentation

Implementation Consultant — *January 2015 - November 2015*

- Designed the use of CareCom A/S's HealthTerm application for usage with Orion Health's Amadeus product.
- Created extensive user documentation for the application's usage for Orion Health and new clients.
- Tested and deployed HealthTerm into a cloud-based production environment for existing and new clients.

Toolkit: Same as above

The University of Auckland — *Auckland, New Zealand*

Course Tutor and Marker — *July 2010 - November 2013*

- As tutor and marker for engineering classes, I helped create and deliver tutorial and lab sessions for undergraduate students.
- I taught MATLAB and R programming, and taught students academic writing and how to deliver effective project presentations.

Programming Languages: MATLAB, R
Other: Academic writing and presentation

Research Assistant — *November 2010 - March 2013*

- Together with the Cybernose Group of Plant & Food Research NZ, I designed the signal processing backend of an olfactory biosensor for detecting ripe or rotten fruits.

Programming Languages: MATLAB

Auckland Bioengineering Institute — *Auckland, New Zealand*

Research Assistant — *November 2010 - June 2011*

- Same as above.

Faculty of Information and Communications Technology, Universiti Teknikal Malaysia Melaka — *Malaka, Malaysia*

Student Research Assistant — *November 2009 - January 2010*

- 3D feature extraction using a low-end USB camera for identifying fabric defects in a production line.

Programming Languages: MATLAB

Education

The University of Auckland — *Auckland, New Zealand*

Doctor of Philosophy — *January 2013 - PRESENT*

- Doctoral Research Scholarship from New Zealand's New Economy Research Fund

The University of Auckland — *Auckland, New Zealand*

Master of Engineering in Engineering Science — *July 2011 - May 2013*

- First Class Honours
- Masters Research Scholarship from New Zealand's New Economy Research Fund

The University of Tokushima — *Tokushima, Japan*

Summer School in Information Science and Intelligent Systems — *August 2012*

- Summer School Exchange Scholarship

The University of Auckland — *Auckland, New Zealand*

Bachelor of Engineering in Biomedical Engineering — *February 2008 - September 2011*

- Second Class Honours
- Kickstarter Merit Scholarship

Westlake Boys High School — *Auckland, New Zealand*

High School Qualification — *January 2003 - December 2007*

- Cambridge International Examinations AS and A Levels
- Student exchange program to Japan in 2016

Program Committees

2015 - 2018	**Futureintech Ambassador**, *Engineering New Zealand*	*Auckland, New Zealand*
2013 - 2017	**Secretary & Student Representative**, *IEEE EMBS New Zealand North Chapter*	*Auckland, New Zealand*
2013 - 2014	**Board Member**, *Post Graduate Students' Association*	*Auckland, New Zealand*
2013 - 2014	**Vice President**, *Engineering Postgraduate Society*	*Auckland, New Zealand*
2012 - 2014	**Vice President**, *Indonesian Student Association, Auckland NZ Chapter*	*Auckland, New Zealand*

Awards

September 2013 — **Engineering Postgraduate Poster Competition 2013 People's Choice Award** — *Auckland, New Zealand*

Engineering Postgraduate Society

Awarded the People's Choice Award for the poster "Identifying Odorants Using Fly-Mosquito Olfactory Sensors and Multi-Layer Perceptron Classification Techniques for an Olfactory Biosensor Device" at the 2013 Engineering Postgraduate Poster Competition.

August 2013 — **Doctoral Research Scholarship** — *Auckland, New Zealand*

New Zealand's New Economy Research Fund

A scholarship to fund a Doctoral degree research project in collaboration with Plant & Food Research Ltd.

August 2012 — **Summer School Exchange Scholarship** — *Tokushima, Japan*

The University of Tokushima

A scholarship for participation in the Summer School Program initiated by the Center for International Coorporation in Engineering Education (CICEE).

July 2011 — **Masters Research Scholarship** — *Auckland, New Zealand*

New Zealand's New Economy Research Fund

A scholarship to fund a Masters degree research project in collaboration with Plant & Food Research Ltd.

November 2010 — **University of Auckland Summer Studentship Scholarship** — *Auckland, New Zealand*

The University of Auckland

A Summer Research Scholarship for undergraduate students to undertake a research project over the summer.

November 2009 — **Universiti Teknikal Malaysia Melaka Summer Studentship Scholarship** — *Malacca, Malaysia*

Universiti Teknikal Malaysia Melaka

A Summer Research Scholarship for undergraduate students to undertake a research project over the summer.

February 2008 — **University of Auckland Kickstarter Merit Scholarship** — *Auckland, New Zealand*

The University of Auckland

The University of Auckland Kickstarter Merit Scholarships are awarded to up to 8 New Zealand school leavers who "demonstrate excellence in their academic results and in their personal achievements".

Publications

Journal Papers

Using Multilayer Perceptron Computation to Discover Ideal Insect Olfactory Receptor Combinations in the Mosquito and Fruit Fly for an Efficient Electronic Nose — *January 2015*

Luqman R. Bachtiar, Charles P. Unsworth and Richard D. Newcomb

Neural Computation, The MIT Press Journals

Multilayer Perceptron Classification of Unknown Volatile Chemicals from the Firing Rates of Insect Olfactory Sensory Neurons and Its Application to Biosensor Design — *January 2013*

Luqman R. Bachtiar, Charles P. Unsworth, Richard D. Newcomb and Edmund J. Crampin

Neural Computation, The MIT Press Journals

Conference Papers

Improving Odorant Chemical Class Prediction with Multi-Layer Perceptrons Using Temporal Odorant Spike Responses from Drosophila melanogaster Olfactory Receptor Neurons — *October 2016*

Luqman R. Bachtiar ; Richard D. Newcomb ; Andrew V. Kralicek ; Charles P. Unsworth

2016 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society

Identifying Breath Biomarkers of Tuberculosis from Drosophila melanogaster Olfactory Receptor Firing Rates with Artificial Neural Networks — *November 2015* *Redacted*

Luqman R. Bachtiar ; Andrew V. Kralicek ; Charles P. Unsworth

Accepted to the 2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society

“Super E-Noses”: Multi-Layer Perceptron Classification of Volatile Odorants from the Firing Rates of Cross-Species Olfactory Receptor Arrays — *November 2014*

Luqman R. Bachtiar ; Charles P. Unsworth ; Richard D. Newcomb

2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society

Artificial Neural Network Prediction of Specific VOCs and Blended VOCs for Various Concentrations from the Olfactory Receptor Firing Rates of Drosophila melanogaster — *November 2014*

Luqman R. Bachtiar ; Charles P. Unsworth ; Richard D. Newcomb

2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society

Application of Artificial Neural Networks on Mosquito Olfactory Receptor Neurons for an Olfactory Biosensor — *September 2013*

Luqman R. Bachtiar ; Charles P. Unsworth ; Richard D. Newcomb

2013 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society

Predicting Odorant Chemical Class from Odorant Descriptor Values with an Assembly of Multi-Layer Perceptrons — *December 2011*

Luqman R. Bachtiar ; Charles P. Unsworth ; Richard D. Newcomb ; Edmund J. Crampin

2011 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society

Using Artificial Neural Networks to Classify Unknown Volatile Chemicals from the Firings of Insect Olfactory Sensory Neurons — *December 2011*

Luqman R. Bachtiar ; Charles P. Unsworth ; Richard D. Newcomb ; Edmund J. Crampin

2011 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society

The Cybernose Project: Predicting the Sense of Smell — *June 2011*

Charles P. Unsworth ; Luqman R. Bachtiar ; Richard D. Newcomb ; Edmund J. Crampin

2011 18th Annual Joint Symposium on Neural Computation