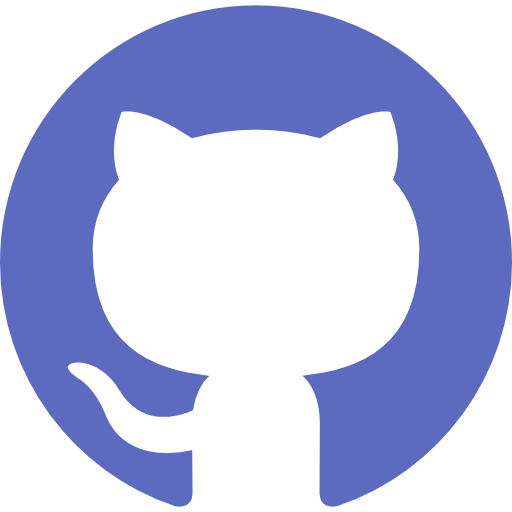
**JONATHAN TAN**

A picture containing vector graphics

Description automatically generated **+61 450787453** A close up of a sign

Description automatically generated **jtsw1990@gmail.com** A picture containing furniture

Description automatically generated **259-261 Clarence Street**  
A picture containing vector graphics

Description automatically generated [**https://jonathantansw.com**](https://jonathantansw.com) **Jonathan Tan**  **Jtsw1990**

**About Me**

Data scientist and AIAA with commercial experience in the life and general insurance sectors, dealing with technical cost modelling, pricing engine development, commercial pricing, performance reporting and monitoring. Possesses strong technical foundations in statistics, mathematics and computing, with proven ability to provide data-driven solutions across the data science pipeline, from data extraction to business integration. Active participant in the data science community with open challenges and contributor to the Institute of Actuaries Australia’s “actuaries digital” analytics column.

**Experience**

**nib Health Funds Ltd (nib Travel)** A picture containing vector graphics

Description automatically generatedSydney **May 2021 – Current**

Position: Senior Data Scientist, Travel

* Lead development of inhouse technical pricing models for travel insurance
* Designing and implementing tech and data science strategy for actuarial team
* Delivered COVID-19 modelling and pricing strategies for multiple travel insurance brands resulting in 20% improvements in underwriting performance for the AU book
* Delivered and communicated commercial structure and financial projections for tender process

**IAG Ltd** A picture containing vector graphics

Description automatically generatedSydney **Feb 2021 – May 2021**

Position: Lead Algorithm Development, Pricing Engine

* Pricing algorithm development lead for niche portfolios (Caravan, Trailer, Motorcycle, Strata)
  + Design and development of algorithms from technical cost to final premium using EARNIX
  + Planning and resource allocation for dev team using the AGILE framework
  + Stakeholder management between product and technology teams

**IAG Ltd** A picture containing vector graphics

Description automatically generatedSydney **May 2020 – Feb 2021**

Position: Consultant, Pricing Engine

* Development and deployment of automation scripts
  + Reduced rate setting process by ~70% with data pipeline in Python3
  + Eliminated manual testing processes across departments with automated API requests in R
    - Automated conversion between flat structures and JSON formatted data
    - Automated requests to EARNIX server for batch runs
  + Integration of database tables into excel through db2 drivers to eliminate accessibility issues
* Systems and integration testing of Home/Motor algorithms with Postman and R
* Rate setting and pricing for Strata portfolio

**nib Health Funds Ltd (nib Travel)** A picture containing vector graphics

Description automatically generatedSydney **Jul 2018 – May 2020**

Position: Actuarial Analyst

* Writing and maintaining ETLs in SQL Server/ Snowflake/ Python for monthly reporting requirements
* Parametric earnings modelling with MLE and goodness of fit using Scipy
* Automation of recurring reporting and scraping processes using Python and VBA
* Technical pricing models based on claims frequency and severity:
  + Gradient Boosted Machines with XGBoost and h2o
  + Generalised Linear models with Scipy
* TF-IDF model and clustering for claim segmentation using h2o for new claims data from M&A
* Support underwriting function and decision making:
  + Building travel alert and embargo decision chatbot using Python Slack RTM API
  + Loss ratio analysis for insurance partner endorsements

**AVIVA Ltd** A picture containing vector graphics

Description automatically generatedSingapore **May 2018 – Jul 2018**

Position: Actuarial Executive (Contractor)

* Quarterly actuarial reporting to MAS (Monetary Authority of Singapore)
* Automation of analysis and reporting processes on MS Access SQL and VBA
  + Reduced reporting steps by approximately 40% through subroutines and scripts
  + Negated the use of manual adjustments for lapsed/expired/surrendered policies

**Personal Projects**

* Melbourne Business Analytics Datathon 2021
* Part-time data consulting for marketing firms:
  + With web scraping and text analytics

<https://pricingengine-4cscr.ondigitalocean.app/>

* Insurance pricing engine built from scratch in Python/Flask/Nodejs/React

<https://unpoliticly.com/>

* Fun Nodejs/Ejs/Express/MongoDB web app built while having some drinks one night

<https://nojutsu.io/>

* First project on web development and data wrangling at the API layer
* Nodejs/Ejs/Express/Mongo stack
* Member features/online chat/advertising platform for tutors
* Grab AI Challenge 2019: Safety with telematics
* Kaggle California Housing Challenge 2018 – Placed top 1000
* Writer for the Actuaries Institute Australia Digital on Data analytics
  + [Explainable ML: SHAP values](https://www.actuaries.digital/2021/02/05/explainable-ml-a-peek-into-the-black-box-through-shap/)
  + [Natural Language Processing](https://www.actuaries.digital/2018/11/20/analytics-snippet-natural-language-processing-text-classification/)
  + [GitHub and Version Control](https://www.actuaries.digital/2019/04/17/analytics-snippet-version-control-because-the-recycle-bin-doesnt-count/)

<https://jonathantansw.com>

* Overfitting visualised: interactive widget with K-NN and SVM models
* Neural network explained and visualised with interactive Jupyter notebook
* Optical character recognition tool using JavaScript canvas
* Various articles on statistics and general programming

**Education**

**Australian National University** **Feb 2015 – Dec 2017**

Master of Actuarial Practice

* GPA **6.2**/7, WAM 79%, distinction average
* Provided tutoring for mathematical statistics and advanced investments courses

**Singapore Institute of Management (RMIT)**  **July 2012 – July 2014**

Bachelor of Accountancy

* GPA **3.6**/4.0, WAM 80%, High distinction average
  + Awarded CPA Australia Scholarship
  + Graduated in top 5% of cohort
* Volunteer, PALS Tutoring Program
  + Tutored introductory statistics and economics
  + Liaised with lecturers on improvement of course material for better admission of material

**My Stack & Skills**

# **Python3 MS Excel VBA JavaScript R HTML5 SQL Server Snowflake**

# **Postman JIRA/Confluence** **NodeJS** **Git Databricks**

**Web Scraping Data Analysis Generalised Linear Models**

**Gradient Boosted Machines Random Forests Statistical Modelling**

**Data Visualisation Financial Reporting Data Cleaning Stakeholder Communication  
API Integration System Testing**