Sandbox Project:

The Perspective from a Top-Performing Team

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About our project

- Suncorp industry sponsor
- Tasked to **price building insurance** data for **small- and medium-sized enterprises** (SMEs) using **machine learning** techniques
    - Consisted of data cleaning, EDA, clustering, and predictive modelling
- 6,700-entry dataset of claims incurred, and predictors such as building material types, occupations, peril classes, year, and location

The process

- Timeline
  - Forming groups
  - Milestone submissions x 3 (every 1-2 weeks)
  - Final presentation (+ 1 page written report)
- And if you become the top group, you can expect…
  - Industry presentation (office tour?)
  - Connections with industry partners
  - Being featured in Actuaries Digital!

The process

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by DR FEI HUANG, KEVIN LIU and JASON YU

Posted 6 May 2022

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How can we predict building claims costs in Small Medium Enterprises (SME) across Australia using advanced statistical machine learning techniques? Or group and price hundreds of different industries based on data and business knowledge? How should we deal with sparse data spread across hundreds of categories?

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The experience

- What we liked about our Sandbox experience
  - **Consistently getting feedback** from industry partners (e.g. we incorporated more practical considerations after seeing their comments)
  - Being able to see other teams' submissions in the cohort & **learn from them**
  - Milestone submissions - forcing you to be **good at time management**
- What we found challenging
  - Milestone submissions - **keeping up the effort** over the entire term
  - **Collaborating on the R code** (code review, version control, …)
  - **Selecting which material** to present (you only have 5-10 minutes for each presentation)
  - Technical difficulties with recording
- What's in it for me?
  - An opportunity to work on **a real-world data science problem from end to end**
  - **Learning from the practitioners** -> preps you for an actuarial career
  - Learning to make good (professional looking) slides and presentations

Our advice - Technical work

- Start early
- Do the data cleaning & analysis well - all later modelling is dependent on that
- Be creative & be critical
  - You can go beyond the course (e.g. research papers, industry insights)
- Learning from others
  - Learn from your peers
  - Improve your solutions based on industry partner’s feedback
- Keep in mind business objectives
  - Consider what the industry partner wants to hear
  - Model interpretation, deployment, business implications
- Don’t be afraid to ask for clarifications from the industry partners/lecturers

Our advice - People skills (Teamwork)

- Organise your work/code - GitHub or Google Drive at least
- Write good code so your team members can review and understand it
  - Good code style (e.g. Best Practices for Writing R Code)
- Work at your strength (but in a collaborative way)
- Meet frequently to share your thoughts
- Manage conflicts: if your team has different opinions, try and evaluate them. Don’t be afraid of confrontations (but be respectful)