

Subject: Interview of 4 participants of the “Machine Learning with Python - Introductory Course Series I” (July-August 2018, 5 weekly evenings of 3 hours)

Organizer: Singapore Actuarial Society

Venue: PartnerRe Singapore

Teacher: *Karthikan SELVARAJ*, PwC Technology Consultant (Data & Analytics)

Facilitator: *Frederic BOULLIUNG*, SAS Data Analytics Committee Chairman

Interviewed: *Dipti Kalyandurg Math*, Milliman Actuarial Analyst; *John Lian*, Willis Senior Analyst; *John Xie*, Berkley Pricing Actuary; *Velda Tan*, Aspen Actuarial Analyst



Topics of the courses:

- Data science methodologies
- Introduction to Python (language/coding/library)
- Data manipulation & visualization
- Exploratory data analysis
- Breakdown of Machines learning algorithms
- Practical case study (predict Titanic survivors) with pro-con of different machine learning approaches

SAS: What do you think about the overall flow of the course and the exercises/homework at the end of each lesson?

DiptiK: The flow of the course was optimal - it provided the ideal time to absorb the content while the take-home exercises between each session provided an opportunity to train and test oneself (pun intended) with the applicability of what was learned during each session. The course would have been incomplete without the exercises.

JohnL: Intense, but interesting; tired, but crazy. Takes an interactive instructor, eager students, and a flexible course that followed the speed of the class to make the completion of the course a pleasant trip.

JohnX: I felt that the flow is great and the pace of the course is just right for me. The only thing that I felt a bit difficult is the last week's homework, which I think I would need a bit more time to finish.

VeldaT: *The flow was good- intense and necessary such that the content can be remembered from one week to another.*

The exercises was good to allow us to apply what we have learnt. Though, it would be good to have a cheat sheet on the following codes that we can use- of course, there is always Google. I think this flow is good for those with a basic programming language which perhaps could be the target audience in the future.



SAS: How was the dynamics/atmosphere of the class (e.g. teacher and students)?

DiptiK: *The batch size was well-suited giving scope for more engaging sessions and flexibility in terms of flow of the session. Students from different job roles had different approaches towards a solution which was shared on multiple occasions. The organizing committee definitely made it worthwhile attending the sessions post a full day of work!*

JohnL: *The instructor had eased the intensity of the already intensive class thru friendliness and opened to questions and answers style conversation. While the class comprise students intent on learning, following the type along style of coding with the instructor, and making potential knocking-head-to-the-wall questions were everything intended of a proper class.*

JohnX: *Great! I think both teacher and students are very actively engaged. It is shown by the number of questions and interactions between teachers and students. The only downside of such good interaction is the class were usually running over time.*

VeldaT: *Everyone was keen to learn. The teacher was amazing at keeping the lesson interesting especially when lessons were after work, late at night.*



SAS: Do you feel confident to use Python at work? Why?

DiptiK: The exercises were designed to encourage working with Python independently which further helped gain confidence with the language. Python is very adaptable as a tool and I think it can support in arriving at a business solution.

JohnL: Almost, albeit having just picked up tools, having used the tools in the workshop prior to showcasing in the streets is tantamount to professionalism. We apprenticed, hit a nail or two home, but are not readily carpenters.

JohnX: I almost had zero knowledge about Python at the beginning of the course, I am much more confident now to use Python for some relatively simple task at work.



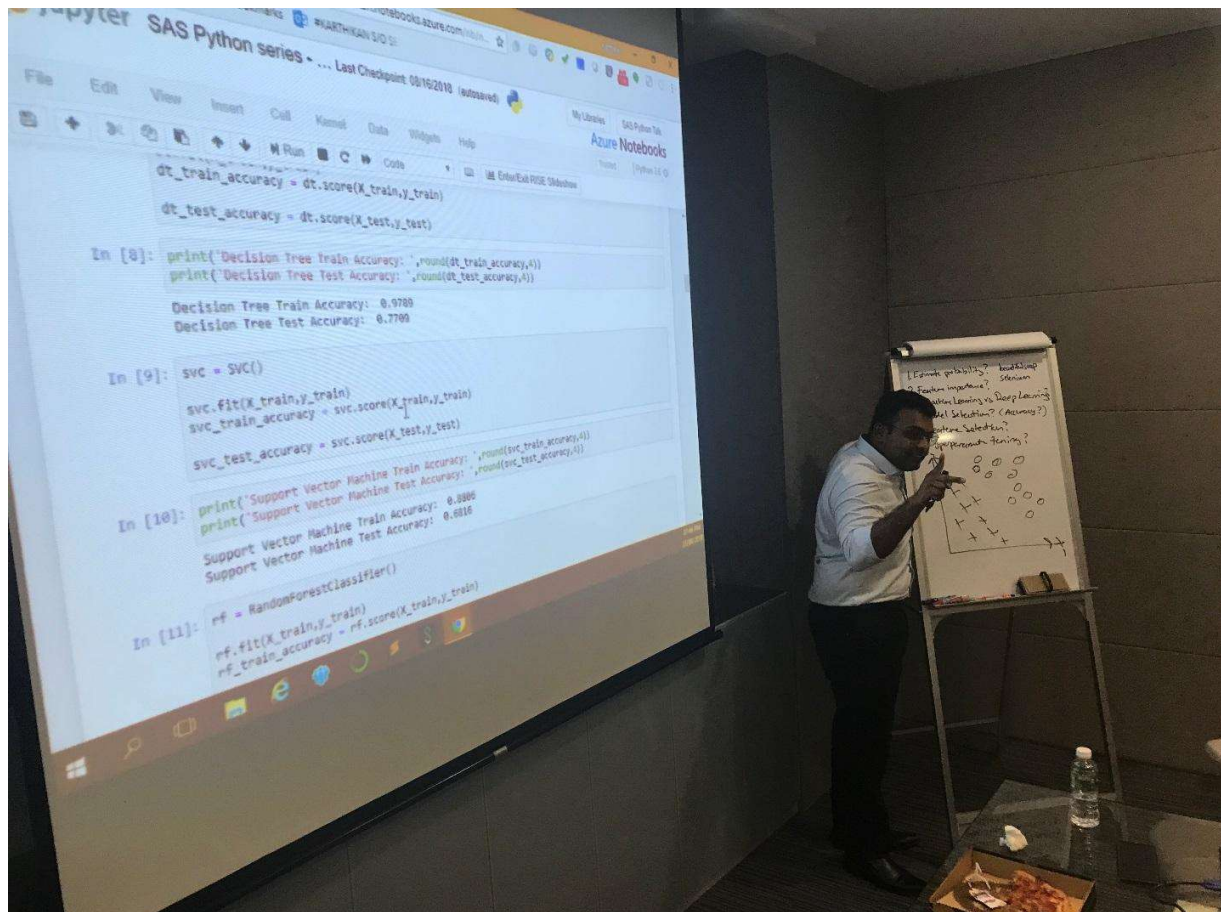
SAS: Do you feel confident to use Machine Learning techniques in your work ? Why/Why not?

DiptiK: Fairly confident - the final few sessions greatly focus on the machine learning techniques applied to datasets. This combined with domain knowledge provides a good place to start choosing a suitable technique for the problem. Deeper understanding of the techniques can be built upon since the course provided useful introductions to several of them.

JohnL: To an extent, yes. Though we are deep in traditional pricing and reserving methods, as more data becomes available to sacrifice tradition to scientific projections, with buy in from the community (in this case, the bosses have to be as progressive as well, which probably takes a generation of CPD hours to be gained), then could we be confident. At the moment, these newly learned technics are at best at pilot stage, where both old and new methods have to be carried out alongside to verify, first, the new science, then later the traditional methods. Until the industry is ready to shed tradition, which requires an initial critical mass to tip the scales.

JohnX: I think for a beginner of machine learning, I felt much more confident comparing to at the beginning of the course. But I think I will still need a bit more practice in order to be confidence enough to use it at work.

VeldaT: The course allowed us to learn the concepts behind machine learning. Hence, I would be comfortable to reach out on these concepts with Google as my Best Friend. Of course, picking up new codes would require time. At least, the course allowed that learning curve to be less steep.

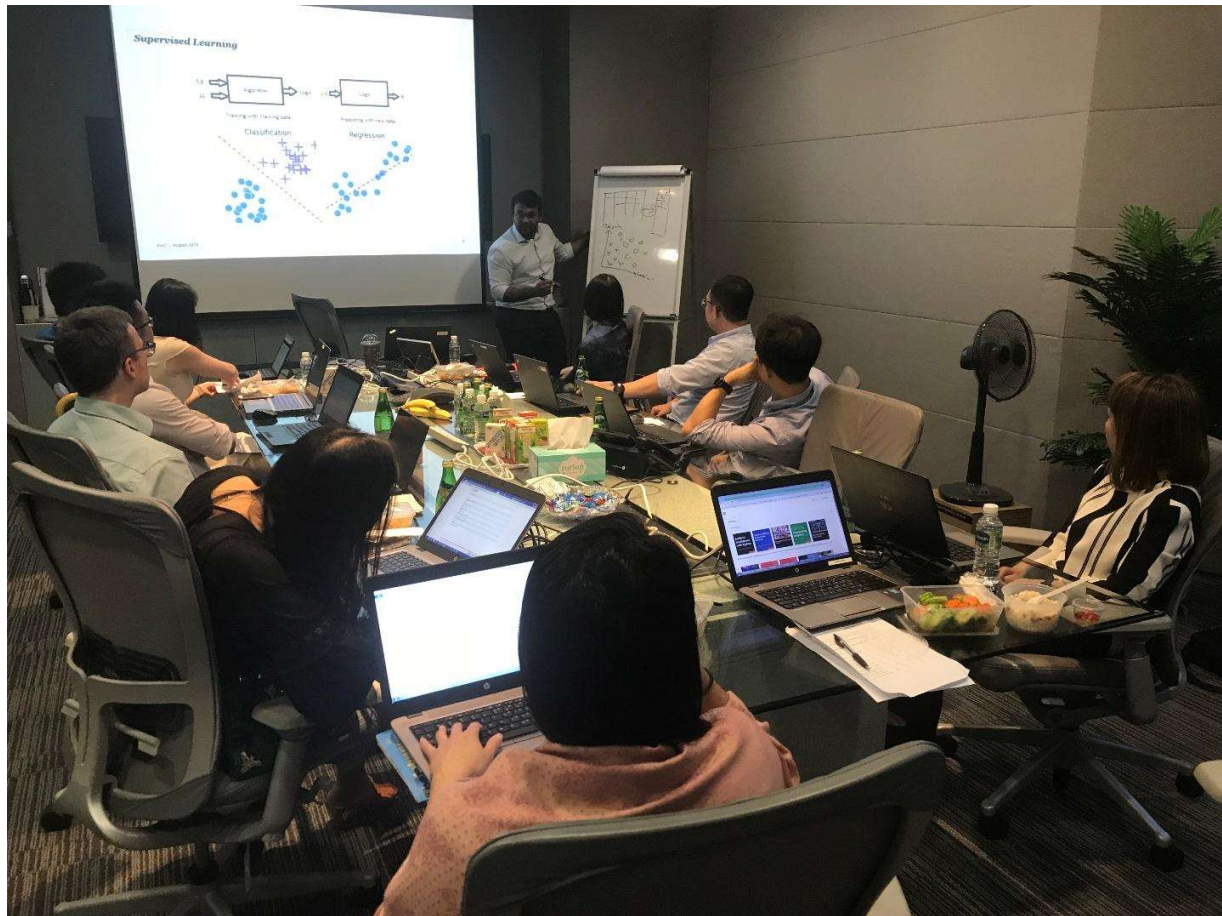


SAS: Has the course offered great value for money?

DiptiK: Yes!

JohnL: *Great! Even if I just came for food alone, and listen to Karthik talk + Fred asking questions, and everyone throwing random questions around. Other than that, I found the content to be relevant to the objective and topic, and made most of the homework plus lectures put the ideas lectured into practice.*

JohnX: *Absolutely! The course fees is such a bargain.*



SAS: Would you recommend this course and to whom?

DiptiK: *The course provides direction for someone new to the analytics world by providing support in learning Python with focus on machine learning techniques. I would recommend this to:*

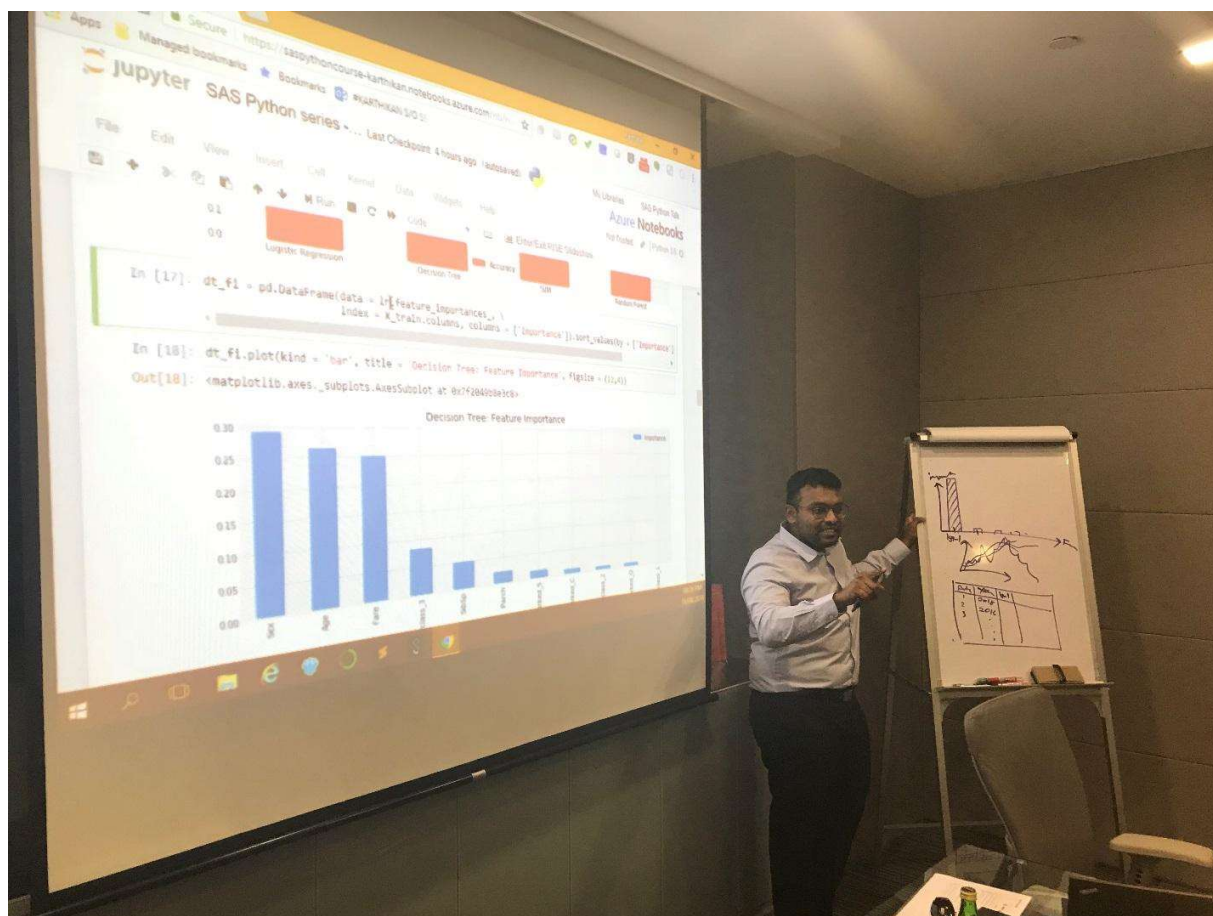
- *One who is prepared to commit time to attempt exercises independently between sessions. This is an underlying requirement to get the most of the series. The amount of time spent in the take-home exercises is incremental to the sessions (begins with about half-hour in the week between session 1 & 2 and increases to 2-3 hours in the week between the final two sessions).*
- *One who feels that their existing tool is not adaptable enough to accommodate their solution ideas*
- *One who is in the actuarial industry and would like to understand the usability of Python in their current role*

JohnL: *Colleagues mostly, as the SAS isn't available to people outside the industry. I had Cat modelling friends whom would like to join the SAS, but discovered that they required 2 actuarial papers to join the society. Maybe a CFA? ARE? Or Cat RMS, EQECAT, AIR certification could be established to absorb to different class of SAS data scientist?*

JohnX: *I would recommend the course to all people have their job related to data analytics.*

VeldaT: *This course should be recommended to those with basic programming language and willing to step out of their comfort zone to learn a new programming language to be relevant in today's*

ever changing working world. Basic programming language should be required given that the course is intense and a good pace for those that do.



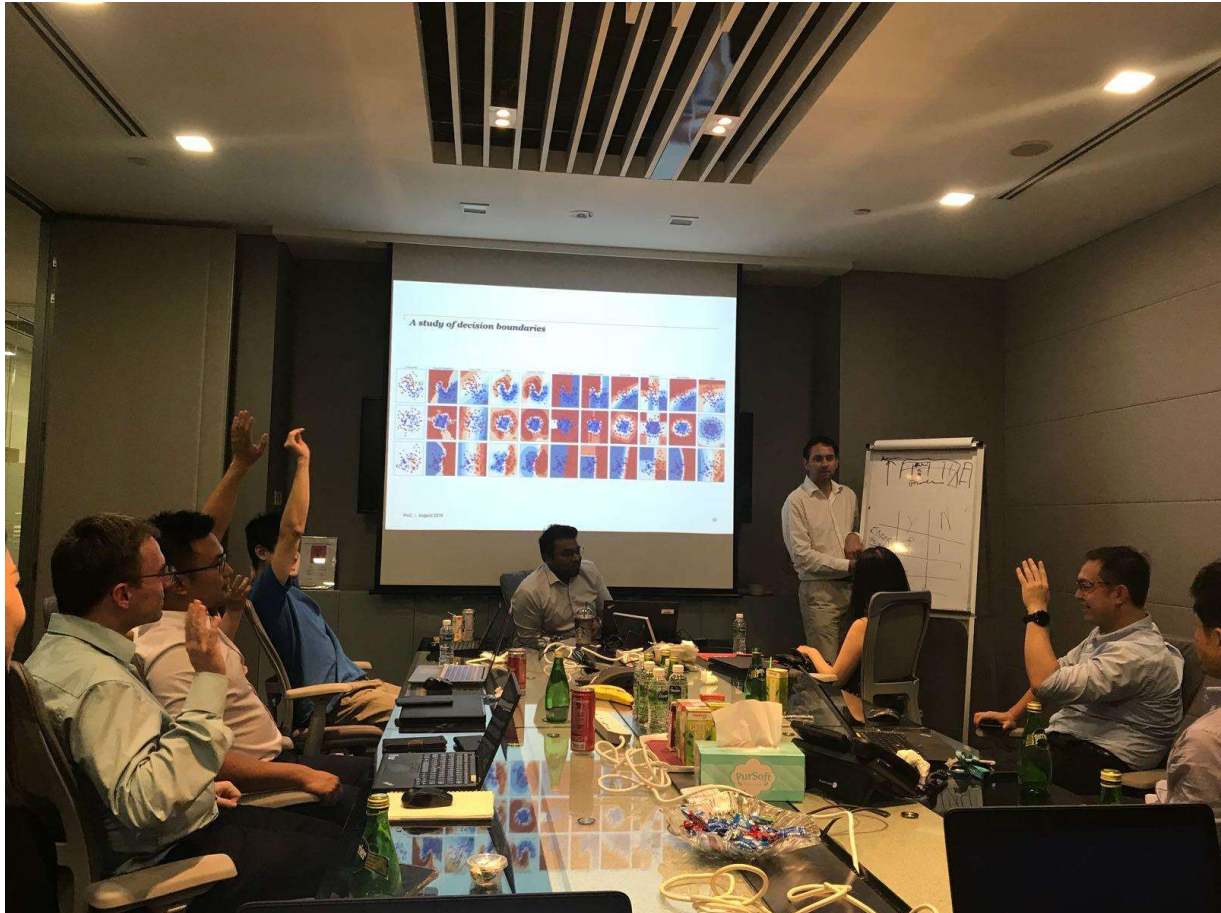
SAS: Which aspect of the course do you like the most?

DiptiK: Karthik's teaching style with just the right balance in focusing on concept behind machine learning techniques and learning the language itself. Also appreciate the personal examples he provided with respect to his experience dealing with data. Flexibility and friendliness of the organizing committee

JohnL: The course content, the delivery/presentation. With very hands on coding.

*JohnX: The teaching method, examples + homework. It allows students learn at their own pace, they can decide how much time they want to spend on homework.
And dinner of course*

VeldaT: Content, atmosphere, people. Pleasantly surprised when feedback was taken into account for spicing up the food menu. (Thank you Frederic- yes, it needed special mention)



SAS: What did you like the least?

DiptiK: *While the exercises between classes were discussed at the start of new session by the instructor, it would have been interesting to discuss few solutions used by other students for the same assignment. Perhaps this could be done at end of class as an optional segment.*

JohnL: *It's not a dislike, just one I like least, but still a like later, maybe. IT equipment.*

JohnX: *Sometimes the class run overtime by about an hour. I guess it is ok that people leave earlier but I also would not want to miss anything.*

VeldaT: *Minor things like the Projector which was blur most of the time.*

SAS: Any other comments?

DiptiK: *For people looking for collaboration and volunteering - great opportunity offered after the course to contribute and support the SAS Data Analytics Committee in several ways.*

JohnL: *Good work, nice organizing, some equipment didn't go smoothly but Karthik kept the talking going, and everything's great.*

JohnX: *I think you guys have done a fantastic job. I really could not complain.*