# About This Document

This Word document presents Arkie’s editorial suggestions for the [Analytics@Sauder website](https://analytics-at-sauder.github.io/index.html). Arkie will copy/paste the existing text from the webpages here, and offer suggestions in the colour red, so that it is clear where the edits and suggestions have been made. Any larger suggestions, if any, will be made below the appropriate section and highlighted in yellow.

# Home Page

**(Title) UBC Business Analytics Open Learning Resources**

**Analytics@Sauder** is ~~currently~~ a recent (or new?) University of British Columbia (UBC) Teaching and Learning Enhancement Fund (TLEF) sponsored project. The objective of this P~~p~~roject is to curate a collection of open-source business analytics tools and resources ~~examples~~, to promote opportunities for hands-on learning, to foster an ~~business analytics~~ online, academic ~~learning~~ community of business analytics, and to facilitate conversations around data analytics within a broader business context. ~~We hope that this Pproject can be helpful to business analytics professionals of all skill levels; at the same time~~ We hope that the UBC Business Analytics Open Learning Resources can provide a platform of mutual learning: while we hope that this Project can be helpful to business analytics professionals of all skill levels, we appreciate all feedback on our resources so that we can continue to improve what we do. ~~w~~We welcome suggestions, contributions, and collaborations of all kinds.

**(Heading) Navigate This Website**

The **Blog** page, ~~(~~UBC Business Analytics Blog~~)~~, is a platform where users can share posts and have discussions around any news, tools, and applications involving data analytics in the business world. The **Projects** page contains a list of Jupyter Notebooks with applications of analytics in various business domains. Detailed information on how to contribute to our repository can be found under the **Help** page, along with ~~as well as~~ tutorials for Git, GitHub, Jupyter Notebook, Syzygy, and Binder ~~can all be found on the Help page~~.

# About This Project

The goal of this Project ~~repository~~ is to create an open repository for ~~Business Analytics~~ ~~L~~learning ~~R~~resources to enhance ~~students’~~ data analysis and meta-skills for business analytics professionals of all skill levels. The UBC Business Analytics Learning Resources will provide various opportunities for hands-on experience~~s~~ and experimentation, ~~activities~~ grounded in ‘real-life’ data and business problems, using ~~through~~ open-source and cloud-based tools (e.g. Interactive Computing Environment, Jupyter N~~n~~otebooks). ~~This resource allows students~~ These resources allow all users to enhance their meta-skills, ~~(~~including technical skills such as ~~being able~~ the ability to deploy the results of their analyses), where these skills ~~that~~ are in high-demand in the both the business and data analytics industr~~y~~ies.

The UBC Business Analytics Learning Resources ~~This~~ repository contains real world problems, where business analytics programming skills ~~are~~ will be used in providing solutions. These resources will benefit not only MBAN students, ~~(~~including alumni and prospective students~~)~~, but also other students at UBC’s Sauder School of Business, including students of the ~~(e.g.~~ MBA, BCOM, and MM programs~~)~~. This website is also linked to a Github repository that hosts the actual Python and R N~~n~~otebooks, ~~for~~ which are available for download and modification.

# Contribute

**(Title) Get Involved**

This P~~p~~roject started as ~~a foundation to~~ (what we hope is) a foundation for ~~the beginning~~ ~~of~~ an ever-growing repository of reproducible projects that can be used to build one’s business analytics tool box. Your input would be ~~much~~ greatly appreciated, and together, we can build a community where analytics professionals of all skill levels can learn from one another through exchanging ~~exchanges of~~ ideas and algorithms.

On this page ~~Here~~, we will walk ~~you~~ through several ways ~~that~~ you can contribute~~;~~. Before that, ~~however, it is~~ we strongly ~~recommended that~~ encourage you to first take a look at the list of tools that are already covered ~~implemented~~ in ~~this~~ our existing projects, which you can find on the Resources page or under our GitHub repository, ~~especially Git and GitHub,~~ to better understand the current structure of ~~this platform~~ Analytics@Sauder.

**(Title) Share Your Own Notebooks**

You can request to be added as a member of the [Analytics@Sauder Organization] on GitHub. As a member, you ~~would~~ will be able to create your own GitHub repositories and upload any Jupyer N~~n~~otebooks ~~that you want~~ to share with others. Once a new repository~~ies~~ is created, please inform one of our administrators ~~administorators~~ so that it can be added ~~on~~to th~~is~~e Analytics@Sauder website.

**(Title) Provide Suggestions for Existing Notebooks**

Once you are familiar with our Git and GitHub repositories(?) platforms(?), you are welcome to fork and/or clone any repository, edit the Jupyter Notebook, and propose your changes by creating a pull request. One of our administrators will go through the pull requests on a regular basis and approve the changes, where appropriate ~~as needed~~.

Alternatively, if you ~~ran~~ run into a problem that you cannot solve or if you simply ~~just~~ have general comments for a ~~specific~~ particular N~~n~~otebook, you can create an issue within the corresponding GitHub repository. Questions will be addressed by one of our administrators periodically.

**(Title) Write a~~A~~ Blog Post**

The affiliated B~~b~~log is still ~~at~~ in its early stages of development. Details on how you can contribute to our B~~b~~log ~~post contributions~~ will be provided soon.

# Blog

**(Title) Drive Employee Satisfaction and Profit with People Analytics**

*Co-Authors: Amrita Aggarwal, Charlie Cao, Nammn Joshi*

The need to acquire, retain, and grow a diverse and high-performing workforce ~~work force~~ has never been greater. It is imperative to leverage data into human resources (HR) not only in ~~to~~ hir~~e~~ing the right candidate for the right job at the right time but also to in building a data-driven culture across every facet of HR ~~human resources~~ – from resource planning and performance measurement to policy development, employee engagement, and gaining a competitive advantage.

**(subheading) Why do~~es~~ people analytics matter?**

People analytics support~~s~~ decisions by finding the most efficient recruitment channels, matching people with the best jobs/teams, and designing strategies to retain top performers. At the same time, people analytics help~~s~~ improve diversity and highlight~~s~~ any unconscious biases that the company may ~~might~~ have against marginalized communities.

*People a~~A~~nalytics analyze~~s~~ ~~the~~ employee relationships to understand the social network within an organization, helping leaders to find influencers who can push for change~~s~~.*

With a growing number of Millennials and Generation-Z’s in the workforce, relational and influential leadership is becoming increasingly more effective than an authoritative one. People a~~A~~nalytics analyze~~s~~ ~~the~~ employee relationships to understand the social network within an organization, helping leaders to find influencers who can push for change~~s~~. People analytics also quantify~~ies~~ the benefit that leaders bring to the organization~~,~~ by modeling and predicting the effectiveness of training programs and management behaviours.

**(subheading) Where can we procure the required data for people analytics?**

HR departments have ~~has~~ a plethora of data, such as employee information, performance evaluations, compensation structures, etc. Moreover, verticals like sales, finances, and IT departments have their own sets of data. However, the data usually sit in silos~~;~~. that i~~’~~s where people analytics come~~s~~ in~~,~~: ~~by~~ integrating all ~~of~~ these fragmented pieces of data. During an informational interview with a people analytics lead at a multinational electronics retailer, we found an innovative integration of people analytics with administrative data. The company uses predictive people analytics to setup office branches in locations where the most talent is coming from, helping to optimize~~ing~~ lateral moves and forecast~~ing~~ the next line of leadership within the company.

*Employers can use cloud feedback platforms to understand the degree~~s~~ of collaboration~~s~~ between different departments, as well as productivity and energy levels across various teams.*

Another way of procuring data is through regular (e.g. bi-monthly or monthly) anonymous online feedback. Employers can use cloud feedback platforms to understand the degree~~s~~ of collaboration~~s~~between different departments*,* as well as productivity and energy levels across various teams. During an information session with a Vancouver-based technology consulting and implementation company, we learned that employees at the firm can regularly and anonymously record their current mood, productivity level, degree of stress, among ~~and~~ many other measurements. The company then uses this feedback to facilitate conversations, cultivate its workplace atmosphere, and design its ~~their~~ people strategies.

**(subheading) Will the evolution of people analytics cost employees their jobs?**

No, it won’t. People a~~A~~nalytics is a tool to help organiz~~s~~ations do their tasks more efficiently. People analytics ~~It~~ help~~s~~ to better segment the employees and better target HR ~~human resource~~ policies that are customized to the~~ir~~ employees’ needs. The time saved by ~~not doing~~ avoiding repetitive tasks can be better ~~utilized in~~ put towards focusing on insights and creating value.

**(subheading) How do we address the delicate issue of privacy?**

“With great power~~,~~ comes great responsibility”. The concern for employee confidentiality is ~~real~~ serious, and the right way to navigate this issue is by having clear guidelines on how ~~personnel~~ personal data can and cannot be used. This starts with communicating to employees why the company needs to track their data in the first place, and how this data will be used. If the employees know that data are ~~is~~ being collected, but do not understand how it is being used, then they will begin to make their own assumptions, resulting in distrust. Of course, companies should always seek consent from employees; organiz~~s~~ations pioneering people analytics should also practice an agile approach and always have corrective measures in place to protect employee~~’s~~ privacy.

**(subheading) Will people analytics help organiz~~s~~ations make money?**

Yes. People a~~A~~nalytics focuses on adopting a performance mindset. People analytics ~~It~~ assist~~s~~ HR ~~human resource~~ practitioners ~~to~~ in holistically assessing and addressing business issues. Although profits are hard to account for in the short term, they ~~it~~ become~~s~~ more evident in the form of increased employee retention and decreased employee acquisition costs in the long run. Other benefits of people analytics include ~~can be~~ improved customer service and improved employee productivity ~~level~~. For example, Uber integrates its operational and HR ~~human resource~~ data to determine incentive packages for drivers who can pick up food quickly, and thus improving its ~~their~~ operations and enhancing customer service.

# Resources

If you a~~’~~re new to cloud computing and version control, which are what we use here at Analytics@Sauder ~~upon which this platform is built~~, here is some information to help you get started.

**(Title) Tools**

Various interactive computing and collaboration tools are used throughout Analytics@Sauder ~~this project~~. The tools and their respective learning resources are listed ~~here~~ under the Projects page for the convenience of our users, contribut~~e~~ors, and administrators. In our projects ~~this project~~, Jupyter Notebook, NBViewer, Binder, and Syzygy are used to create the interactive content~~;~~. We use GitHub and ReviewNB to enable collaboration and to keep track of the projects’ histor~~y~~ies~~;~~. Simultaneously, RStudio and WordPress, combined with custom CSS and Javascript, are used to build this website and the affiliated B~~b~~log~~;~~. F~~f~~inally, Google Analytics and Qualtrics are used to help with user research and content evaluation.

**(Title) Interactive Computing**

**(subheading) Jupyter Notebook**

Jupyter Notebook is an open-source interactive computing tool that enables computational narratives. With Jupyter Notebook, users ~~one~~ can create and share executable programming documents where the code is accompanied by writing~~s~~ and visualizations. Currently, Jupyter Notebook is compatible with both Python and R. Jupyter Notebook can be downloaded using Anaconda.

**(subheading) NBViewer**

NBViewer allows users to browse static versions of Jupyter Notebooks ~~in~~ from public GitHub re~~s~~positories (you can read more on GitHub below).

**(subheading) Binder**

Binder, unlike ~~in contrary to~~ NBViewer, hosts interactive Jupyter Notebook images. Users can edit and execute N~~n~~otebooks ~~hosted~~ through on Binder, but changes will not be saved or stored.

**(subheading) Syzygy**

Syzygy hosts virtual Hubs that allow users to create, execute, and save Jupyter Notebooks in a cloud server. Users can log into Syzygy using both Google accounts and UBC accounts when pulling Jupyter Notebooks from Analytics@Sauder.

**(Title) Collaboration**

**(subheading) Git and GitHub**

For users who are new to the command-line interface, it might be more intuitive to learn GitHub first before diving into Git itself.

**(tab) Git**

Git (/ɡɪt/) is an open-source Version Control System (VSC) or Source Code Management (SCM) tool that allows users to create multiple independent local branches (versions) of the same folder that can be merged or deleted. These branches are especially useful for experiment~~s~~ation and testing. Users can push local branches to remote repositories when working in a team. Git also enables team collaborations when used with remote repositories (cloud folders) that are hosted on platforms such as GitHub, which is what we used in the development of Analytics@Sauder.

1. This interactive tutorial on Git is a great place to start learning Git.
2. Once the interactive tutorial is done, set up Git on your local machine by following this guide created by Will Jenden.
3. Learn more about Git by reading this IBM Git Tutorial.

**(tab) GitHub**

GitHub is a code hosting platform for version control and collaboration, which ~~can be~~ is compar~~ed~~able to ~~a~~ cloud folders like ~~such as~~ Google Drive and Dropbox, but includes ~~with~~ additional functionalities. When used locally along with Git ~~locally~~, GitHub is a powerful and efficient tool for users to collaborate on large projects with many files, including Analytics@Sauder. In many cases, employers also see GitHub as a portfolio platform for students who are interested in jobs in the technical field.

1. This short activity is a great place to start learning GitHub.
2. To reinforce your GitHub learning, complete this interactive course on GitHub.
3. More interactive courses on GitHub can be found in the GitHub Learning Lab.

**(subheading) ReviewNB**

ReviewNB is a GitHub ~~(m~~Marketplace~~)~~ application that enables users to create comprehensible comparisons and reviews of Jupyter N~~n~~otebooks. For plain text files, GitHub automatically shows the differences ~~for plain text files~~ between branches and commits the revisions whenever ~~they~~ two branches are compared with one another (here~~’~~ is an example)~~,~~. You can see that ~~where~~ additions are ~~is~~ high~~t~~lighted in green and deletions are in red. However, Jupyter Notebooks are normally presented as rich media renderings of JSON files, which do not translate smoothly into ~~are not very interpretable when shown in~~ plain text files. With the help of ReviewNB, users can see the differences between two Jupyter Notebooks after they are rendered in a new window. At the same time, any edits or comments made in ReviewNB will ~~would~~ be synced back to ~~the~~ GitHub.

**(Title) Web Development**

Th~~is~~e Analytics@Sauder website is ~~currently~~ generated using the built-in site-generat~~e~~or within ~~for~~ RStudio, styled using external CSS and Javascript~~,~~. ~~while~~ T~~t~~he affiliated B~~b~~log is created using UBC Blog, which is powered by WordPress. However, in the ~~foreseeable~~ future, alternative web development tools may ~~might~~ be applied to either or both ~~of~~ the Analytics@Sauder website and the affiliated B~~b~~log.

**(subheading) RStudio**

RStudio ~~and RMarkdown~~ is an Integrated Development Environment (IDE) for R, a statistical computing programming language. On the other hand, RMarkdown ~~on the other hand~~ is a package that has ~~comes with~~ a built-in site generat~~e~~or, which ~~that~~ is useful for analysts and researchers who want to create HTML-formatted content using RMarkdown files (similar to Jupyter N~~n~~otebooks).

The RMarkdown ~~r-mark down~~ guide ~~provides a~~ clearly lays out ~~guide on~~ how to create a simple website using RM~~rm~~arkdown’s site generat~~e~~or and publish it through GitHub Pages. ~~For~~ To explore more complex customizations, the RMarkdown Guidebook provides more tips.

**(subheading) UBC Blog and WordPress**

The affiliated B~~b~~log is still ~~at~~ in its early stages of development. Here is a collection of video tutorials created by Blogging Sandbox on how to use UBC Blog and WordPress.

**(Title) Research and Evaluation**

**(subheading) Google Analytics**

Google Analytics is embedded into Analytics@Sauder ~~this website~~ and can be used to analyze website traffic and user interactions. This beginner’s course is a great place to start learning about Google Analytics.

**(subheading) Qualtrics**

Qualtrics is a survey and research tool with many functions. Here is a list of tutorials that you may reference for ~~to~~ getting ~~you~~ started with Qualtrics. This service can be accessed through the UBC IT Services.

**(Title) Cheat Sheets**

**(subheading) Git**

Check out our introduction to Git above.

1. GitHub Git Cheat Sheet ~~(quick cheat sheet for Git created~~ by GitHub~~)~~
2. Visual Git Cheat Sheet
3. Official Git Reference: a complete documentation of~~n~~ G~~g~~it commands

**(subheading) Markdown**

Markdown is a lightweight markup language that can be used to format plain text documents. It is frequently used in Jupyter Notebooks and on GitHub.

1. Markdown Cheat Sheet by Markdown Guide
2. GitHub Flavoured Markdown
3. Math Equations in Markdown

**(Title) Data Sources**

**(subheading) Databases**

1. Mergent Online
2. UBC Library Databse
3. Kaggle

**(subheading) Other Data S~~s~~ources**

1. UCI Machine Learning Repository
2. Three Million Instacart Orders
3. Opportunity Insights Economic Tracker