

UConn School of Business MSBAPM club wishes you all a very Happy Chinese New Year!



UConn School of Business

MSBAPM NEWSLETTER

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University of
Connecticut
SCHOOL OF BUSINESS

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ANNOUNCEMENTS

March 8: Open Forum for Internship Search.

Spatial Data Analysis with R

R has a lot of packages which enables you to do Spatial Data Science Analysis. The reason to choose R are as follows:

- R is open source and free
- R reproduces your own analysis as well as allows you to verify your findings with the help of others findings.
- R has a vast number of packages for spatial, statistics analysis along with visualization.

Packages are:

Sp : It has utility function for plotting maps, works with co-ordinates by providing classes and methods for spatial data.

Leaflet : Gives control to user to integrate JavaScript libraries for interactive maps.

Rgdal : It supports import/export of different rasters and vector geospatial data formats. Also implements coordinate reference systems.

Ggplot2 : it is the most popular package for data visualization.

Lubridate: It allows date-time measurements and manipulation with spatial data analysis.

Predictive Analytics for Spatial Data:

1. Data Preparations:

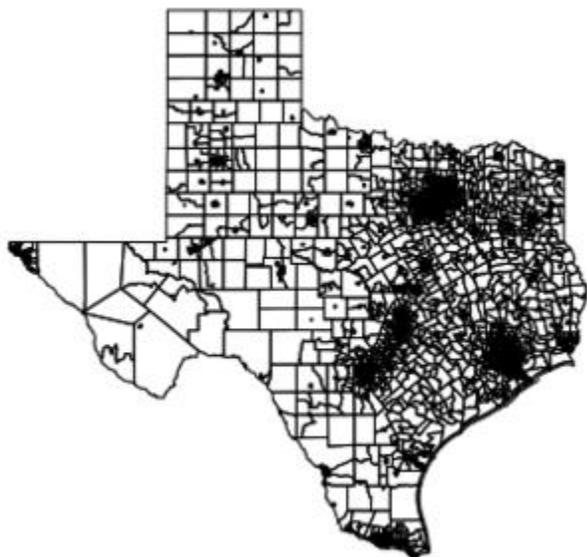
Let's consider the crime data from Houston Police department for over a period of jan 2101- aug 2010. First, install few packages:

```
## These are some of my favorite packages for spatial data analysis
suppressPackageStartupMessages(library(ggmap))
suppressPackageStartupMessages(library(sp))
suppressPackageStartupMessages(library(rgdal))
suppressPackageStartupMessages(library(rgeos))
suppressPackageStartupMessages(library(ggplot2))
suppressPackageStartupMessages(library(leaflet))
suppressPackageStartupMessages(library(dplyr))
suppressPackageStartupMessages(library(magrittr))
suppressPackageStartupMessages(library(readr))
suppressPackageStartupMessages(library(lubridate))
suppressPackageStartupMessages(library(RColorBrewer))
suppressPackageStartupMessages(library(classInt))
```

Now read the data using `read_csv` and study the structure of the data using `head()` and `summary()` commands. Modify variables date and factors to the appropriate formats. Now, convert the local dataframe to `SpatialDataFrame` with the help of `sp` package. We use `CRS()` function to plot co-ordinates in latitude and longitude formats.

```
## Convert to SpatialPointsDataFrame with longitude and latitude so as to use
spatial packages
## The Coordinate Reference System is a Geographic CRS called WGS84
coords <- SpatialPoints(crime_df[, c("lon", "lat")])
crime_spatial_df <- SpatialPointsDataFrame(coords, crime_df)
proj4string(crime_spatial_df) <- CRS("+proj=longlat +ellps=WGS84")
```

Now plot the new Spatial DataFrame using plot() function. Output will be:



2. Data Exploration:

To explore boundaries of spatial data we can use `bbox()` method. Output represents west-east range and second is south-north range.

```
bbox(crime_spatial_df)
```

```
##           min           max
## lon -99.50555 -91.94627
## lat  27.50711  37.33690
```

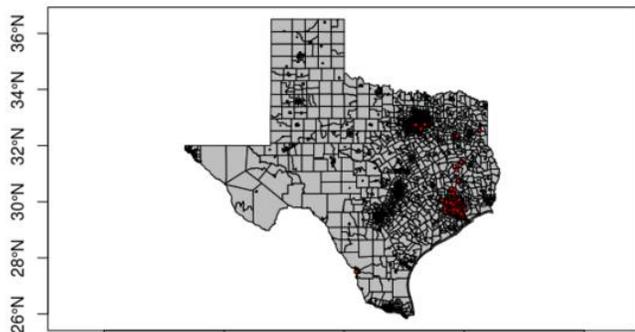
You can filter your data to different region as follows:

```
# Restrict the data to downtown only
downtown_crime <- subset(crime_df,
                        -95.39681 <= lon & lon <= -95.34188 &
                        29.73631 <= lat & lat <= 29.78400)
```

3. Data Visualization:

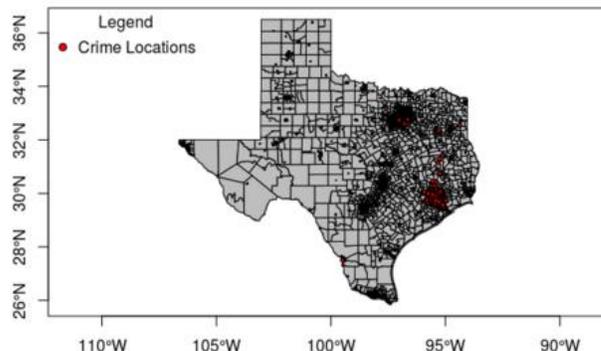
The most popular sp package has the plot() method.

```
plot(texas_shp, col = "grey", axes = TRUE)
plot(crime_spatial_df, pch = 21, bg = "red", cex = .5, add = TRUE)
```



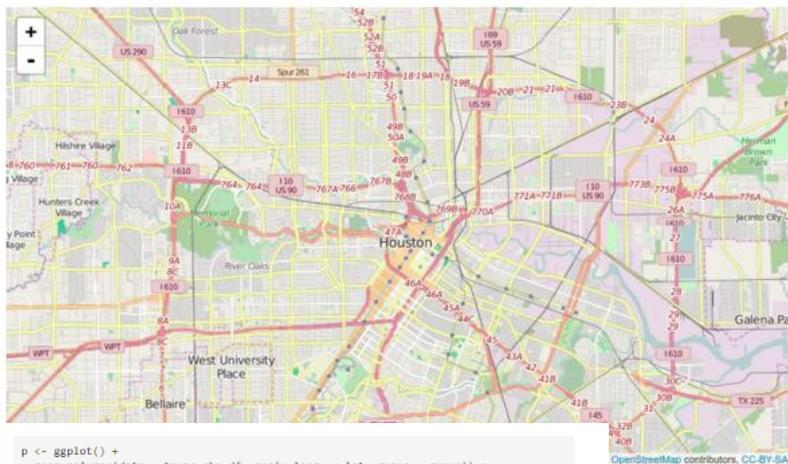
```
plot(texas_shp, col = "grey", axes = TRUE)
plot(crime_spatial_df, pch = 21, bg = "red", cex = .5, add = TRUE)
title("Locations of Offensive Crimes in Houston, Texas")
legend("topleft", title = "Legend", legend = "Crime Locations", pch = 21, pt.bg = "red", bty = "n")
```

Locations of Offensive Crimes in Houston, Texas



Using Leaflet package to plot beautiful maps with layers by using addTiles() method.

```
m <- leaflet() %>% setView(lng = -95.3698028, lat = 29.7604267, zoom = 12) %>% addTiles()
m
```



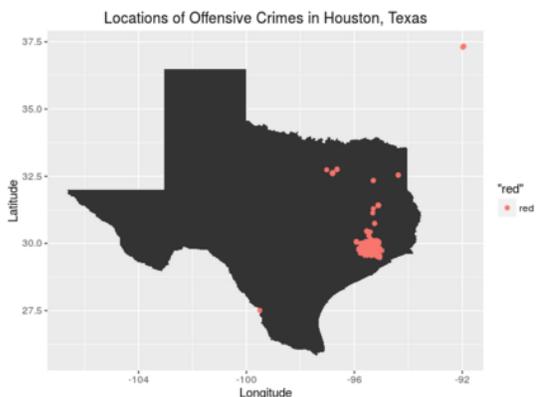
```
m1 <- m %>% addPolygons(data = texas_shp, fillColor = "transparent", color = "black", weight = 1)
m1
```



```
p <- ggplot() +
  geom_polygon(data = texas_shp_df, aes(x=long, y=lat, group = group)) +
  coord_equal() +
  geom_point(data = crime_df, aes(x = lon, y = lat, color = "red")) +
  labs(title = "Locations of Offensive Crimes in Houston, Texas") +
  xlab("Longitude") +
  ylab("Latitude")
p
```

The ggplot2

does not support dataframes and objects from Spatial class. Hence, we would convert them using fortify() function.



```
crime_df <- data.frame(crime_spatial_df)
texas_shp_df <- fortify(texas_shp)
```

Reference : Dominodatalab.com

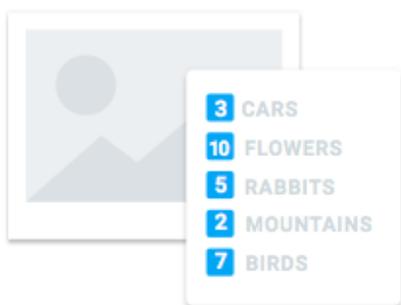
Google Cloud Vision API: Predicts your images

Have you wondered how Google detects your favorite holiday spot or dog? Google Cloud Vision API does it all. It understands images and its content.

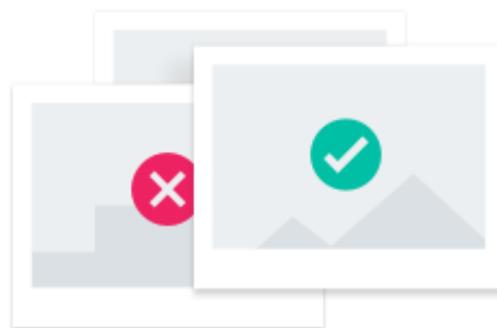
TensorFlow is a machine learning algorithm that analysis and predict the content of your images. It uses neural network on its training datasets. There are versions in which you can train up to 2000 images per month. The limited version has basic objects learnt like boat, sun etc.

The processes involved in powerful analysis:

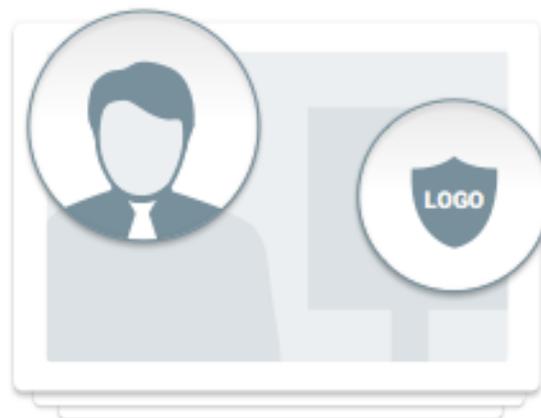
- Insights from your images:
 Detects the broad sets of objects in images like flowers, animals and objects found commonly in images. Every time an update happens the accuracy of object detection is enhanced. • .
 You can use the API to easily build metadata on your image catalog, enabling new scenarios like image based searches or recommendations.



- Detects Inappropriate Content
 From the Google SafeSearch Content, it separates moderately inappropriate content from adult to violent.



- Image Sentiment Analysis
 It's surprising because this API also detects facial attributes like joy, sorrow or anger. Based on this combined with objects detected it predicts the product review. It detects when a face appears in photos, along with associated facial features such as eye, nose and mouth placement, and likelihood of over 8 attributes like joy and sorrow.



- Extracts Text
 Vision API supports many number of languages which are detected via Optical character Recognition that detects text within images. Cloud Vision API returns the identified product brand logo, with the associated bounding polybox.



- **Landmark Detection**

It is used to identify popular natural and manmade structures, along with the associated latitude and longitude of the landmark.



"produce", "score": 0.92816949,
"baccaurea ramiflora", "score": 0.90581322
"fruit", "score": 0.83175766

As part of its announcement, Google is also sharing pricing details for using the API.

"For example, you can now apply Label Detection on an image for as little as \$2 per 1,000 images or Optical Character Recognition (OCR) for \$0.60 for 1,000 images. Pricing will be effective, starting March 1st," reads Google's posts.



"rapid", "score": 0.88886356,
"canoe slalom", "score": 0.88697785
"kayak", "score": 0.86466473



"running", "score": 0.99803412,
"marathon", "score": 0.99482006

How to Stay Positive during Your Job Search

By Katherine Duncan

Searching for a fulltime job can become a fulltime job in and of itself. During your job search, it is imperative to be prepared, put in the hours, and be diligent.

It's difficult to keep your emotions in check during the job search process if you "fall in love" with a job. We've all been there when we see a position posted or hear of one that we feel is perfect for us! It's easy to start obsessing over every little thing you can do

to try and get that job. However, the best thing to do is follow the instructions. You'll want to harness that excitement into writing a strong cover letter, submitting your application on time, and networking to see if you know anyone there. Do your best to keep a cool and levelheaded approach. Once your emotions get really high then you'll over analyze every next step.

You'll need to stay calm through the steps that follow as well. Don't be too hard on yourself if you don't hear back for a few weeks, and don't read into it if the responses are lacking 5 exclamation points like the emails you're sending to them. (Just kidding, write professionally!) If you get a reply that seems short, it doesn't mean they don't like you as a candidate. It probably means that the HR Rep is working quickly to get things moving along.

Lastly, remember that even though you're applying to what feels like a million jobs YOU ONLY NEED ONE! So stick to your job search plan, do a little bit every day, and good luck!

My first job @ UConn, Storrs

By Nilesh Sharma



As I stated earlier in my previous blog (US Education System & 'Auditing Courses') that it is very common in US, unlike India, that students work and study together in their education life. This could be a way to deal with the expensive US education system,

which includes expensive food, travel and house-rents too or this could be an inherent feature of American societies which insist students to achieve financial independence after their under-graduation or in other words when they achieve a minimum qualification for entering into the economic world.

For getting a student job in American Universities require a lot of paper-work for International students which includes getting a Social Security number & Individual Taxpayer Identification Number (ITIN), state taxation work etc. At every point of station where the concern work is to be done, demands cross verification with work-visa policies and identification of concern student. The process is rigid and cumbersome. The whole process requires more than a week time and demands one or more visit to many institutions and offices. Generally, there are separate departments in each university that deal with all the paper-work associated with students.

The hourly wages vary from department-to-department and positions-to-positions. Student Jobs are primarily divided into two categories based on the funding of its sources – Student labor jobs and work-study jobs. The employing department funds the Student Labor jobs and a federal funding in the form of financial aid program for needy students, funds the work-study jobs. The student jobs primarily differed from any other jobs in terms of the upper cap on the number of working hours and hourly wages. The salary is paid weekly, unlike in India, where the employees get their salaries on the last working day of the month.

I traveled 14,000 KM away from my native land but did not get many opportunities to meet and surround myself with the people of other cultural group and life settings. We (most of the Indian students) tend to associate themselves within their own communities. I see my student job as an opportunity to meet people of different cultures settings and communities. It will

help me to learn and adopt their language, their way of approaching towards a problem and a life style which would help me to mingle with them in the future.

The primary challenge that I am facing here is about transportation .I have to travel more than 30 mins each working day to reach to the beautiful Storrs campus. Unlike Indian transportation system, Public transportation in Hartford, or in CT, in general, is neither very effective and nor less-expensive. Other challenges include cold weather, limited vegetarian food options in the food outlets and loneliness. I have seen many people in my family dealing with the challenges in their lives and therefore I am also ready to face them from the front.

Cheers! :)

Faculty Spotlight

Iva Stricevic



1. Describe your work experiences at Travelers as an Analyst. Share few interesting analysis you have done.

[Stricevic,Iva T] Travelers is where I became a data analyst, once I graduated from MS BAPM program. I work for a very interesting Program, having to do with geospatial data. So, not only I learned how to be a data analyst but also how to analyze and understand geospatial data. It is fascinating and I enjoy very much performing it. Every day our team strives to make our data better, as well as gather data from outside and try and apply it. Currently I am leading an initiative where through data analysis we need to come up with a clear process how particular data should be used and in what order. The project is long and ongoing, so stay tuned for the results.

2.What fascinates you the most about Predictive Analytics. Also, suggest a domain where its essence has remained untouched

[Stricevic,Iva T] What fascinates me about Predictive Analytics is that it taught me to do data analysis and make conclusions about processes and the data itself on my own and not waiting for someone to do it for me, or tell me what the data talks about. The power

of doing it myself, and that is applicable everywhere, in any area – universal.

3. Being in the industry for a long time, what advice would you give MSBAPM students to make oneself industry ready? / How should students make best use of their time as students?

[Stricevic, Iva T] I wouldn't say I have been a long time in the industry, but I would recommend students to network with other students, make connections, and learn from their experience during not only individual projects but group projects. During group projects one can learn about itself a lot, and learn different technique how to work with people, which a great skill to have. Of course, learning in class, communicating with the professors is very important as well.

4. Being an MSBAPM alumni, what do you miss the most being at school? Share any of your instance/experience as a student which is memorable.

[Stricevic, Iva T] I miss the ability to bounce ideas of other group members and especially the professors, when having doubts and concerns. I miss the most though the opportunity to learn every day in class. It is true. At work sometimes we tend to repeat same task over and over again. Rarely, you learn the same way you learn in school. I miss the teasing of my brain that the school offers.

5. How do you prefer spending weekends? Please share your hobbies.

[Stricevic, Iva T] My hobbies now are my two kids. I love spending time with them, and my family. If at all have time, I love puzzles.

Alumni Spotlight

Dilip Manjunath



1. Describe your work at EXL Services. Shed light on how analytics touches banking industry.

I started my full time job as an Analytics Consultant for EXL Services on a high note of dedication and eagerness to create significant impact. I was waiting to utilize every opportunity to make a difference, through my past experiences as well as learning in graduate school. Currently, I convene with business users and stakeholders to collect requirements and synthesize them into actionable insights. Once the requirements are signed off, I work on defining relevant performance metrics to monitor credit risk of Small Business credit card portfolio, track performance of the sub-prime lending charge cards and design risk strategies for portfolio securitization. Implemented the same using SAS and Teradata, building Tableau dashboards and making meaningful PowerPoint presentations. I am totally flabbergasted with the exponential learning and growth opportunities at EXL. This has been a challenging as well as an interesting journey so far. I really look forward to some more talented students from UConn to join our prestigious organization who work closely with top banking, insurance and financial service clients.

Innovations in big data and analytics are being leveraged widely by the banking sector to drive revenue, better manage the costs and sharpen risk assessment. In the 90s, IT systems had virtually transformed the banking processes. Today, banks are capitalizing on the rare opportunity and are reinventing themselves with data and analytics.

Especially after the financial crisis in 2008, the discriminatory tower of underwriting models have been worrisome.

The Gini coefficient of their models— which is just a measure of how powerful a model is in terms of its ability to discriminate between good risks and bad risks— was down in the sort of 40- to 45-percent range. What these folks did was developed a 360-degree view of the customer across the entire relationship that small business had with the bank, across all the silos. Not easy to do; easy to talk about. Now the external sources are being tested widely by joining them with the transaction information of the banks to determine their explanatory powers. The models are being rebuilt for supporting better underwriting decisions and improving discriminatory power of the models using various analytical approaches.

Banking sector is also innovating with combining telecommunication information from telecom firms to predict their payment behavior. This actually seems to have paid off with a huge change in making better underwriting decisions. Banks are surely striving hard to redefine the playing field containing slit throat competition with the power of analytics. The differentiator and uniqueness will be created only if banks continue to make thoughtful decisions about investment in data and analytics.

Banks are beginning to harness the power of data in order to derive utility across various spheres of their functioning, ranging from sentiment analysis, product cross selling, regulatory compliances management,

reputational risk management, financial crime management and much more.

The 21st century revolution has found a resonance with banking firms and this will continue to unlock the deep hidden secrets of investment practices, anti-money laundering, avert major disasters and thefts, crime management and the list is never ending.

2. You have analytics background from Sigma back in India. Is analytics approach different in two countries (share what you have learnt from working here)

Although I have been doing the same kind of work back in India and US, the impact at the ground level is way higher in US as compared to India. Making classy presentations and selling impeccable visualizations was an easy task in India. Saying that, from implementation of business rules to gaining business domain expertise, selling analytics to a decision maker who has expansive industry experience is no doubt a daunting task ahead in our careers.

3. Being an alumni, what would you suggest your juniors with respect to course-work and job-search.

Creating meaningful impact to the business can be the only way to succeed in this competitive job market. Align future goals with job search and fine tune the resume accordingly. Concentrate a lot on Probability theory concepts as well as business case studies and Statistics. Data science is not all about predictive models. But more of quantitative analysis to create tangible impact to the business. Internship search can be a tedious one. But then nailing it is surely an easy one with good selling points in your resume. It's surely not a problem without relevant past experience. Leveraging different projects in coursework and participating efficiently in as many data challenges as possible will be the elixir for

getting right jobs. Most importantly, follow your passion and to shine bright like a diamond in the sky.

4. What do you miss being in school the most? Any experience worth the share.

MSBAPM has been one of the best thing that has happened in life to me so far. Vibrant batch mates and cheerful professors have made my stay at UConn a memorable one. Last but not the least, late night studies and partying at 250 main apartments where I reminisced my old engineering days. Internship and job search discussions in the smoking zones, Ice skating, Mohegan Sun, The Russian lady, Table tennis games, beer pong and pool at Pigs Eye and the list goes on.

5. Share your career goals.

With gracious blessings of my parents and support from professors at UConn, coupled with my hard work of course, helped me land a job of my dream in NYC. Currently am working as an Analytics Consultant II at EXL Services. I am working on designing and monitoring risk strategies and building models for commercial underwriting for AMEX credit card division. Building and evaluating probability of default, exposure at default and loss given default models has been my primary work as an analytics consultant for Amex.

Working for Banking and Financial **services** has been my dream for a long time now. I have been fortunate that I found internship at EverBank and currently working for another financial institution. My goal is to pioneer in the field of analytics and solve some of the complex business problems leveraging my analytics skill set and experience.

Student Spotlight

Suresh Shanmugam

1. Briefly describe yourself.

Currently, I am a full-time student in the Business Analytics and Project Management program at UCONN. Having worked for 12 years of work experience in business and technology industries, it feels great to be back at school. Previously, have worked for diverse companies like IBM, Deutsche Bank, and Indian manufacturing firms which gives me a great sense of how business work and the problems industry faces. Previously, I have bachelor's degree in electrical engineering from CEG, Chennai and MBA in analytical finance from Indian School of Business. Apart from this I am a very jovial individual who likes knowing more about people and their experiences.

2. Share interesting experiences at work.

I have an intense passion for alleviating clients' pains and solving strategic business issues with data. I have managed international projects and led global teams. As a managing consultant with IBM, I led their supply chain improvement projects. My greatest achievement there was when my team delivered an improvisation to a large US consumer products company which led to \$15 million in cost savings having lower inventory and better visibility to supply chain performance. It was a huge responsibility as I was the program manager and content oversight for the supply chain analytics team.



3. What fascinates you about Analytics? What are your future plans?

The concept of building models and using them to aid decision making in my consulting career is what fascinates me the most. From the early stages of my career, data and analytics played a crucial role in generating insights that have created revenue and positive impacts in organizations. I built models for supply chain networks, and this aided formulating strategy at firms like Heinz, Fosters, and HIL. These models helped clients save millions of dollars in costs.

4. What are your key learning's from your previous roles in different industry which help you be a better analyst.

I believe a mix of leadership experience with an understanding of technology and business helps you to become a competent data scientist. Personally, I think these 3 skills are critical to becoming successful in any career – leadership, critical thinking and stakeholder management.

5. Share your experience at Alteryx Data Challenge. How did you go about it and your inferences?

I applied my course work knowledge at MSBAPM to real world problems. I believe it makes you think and develop insights into these methods. Previously, have had been successful at competitive hackathons – winner of SwissRe hackathon, Alteryx data challenge and consistent performer in Kaggle competitions. My theory was to approach these situations to understand the problem at hand, quickly learn technical concepts around the problem space, synthesize my insights and apply them in a structured fashion. Also, very importantly I owe a great deal of

gratitude to my teammates in these competitions, without whom I wouldn't have achieved these goals.

6. How do you manage work-life balance?

I make fun weekend trips with my little girls, and they love long road trips. I think, the key to having balance in your life is to understand your priorities. I evaluate my list on a daily basis and helps me focussed on what I want to accomplish in my life.

**Talent of the Month: Blog'ger
Nilesh
Sharma**

I am a BAPM – fall 2015 student of University of



Connecticut. I worked for five years with IT firms in India. I love reading books, drinking tea, and working with people who are not afraid of adventure. I also love writing blogs, making plans and imagining things. My biggest inspiration was my interest in creative work. I always wanted to codify my thoughts and share my experiences of life. Researching on the sources by attending events, meeting people or exploring on the internet is my favorite part. My aim of life is to work in an industry which combines Art and Science, show business and plain business, all rolled into one.

'Back to the school days' refers to the student life. After doing my IT job for 5 years, I came out of my professional life and joined a school for higher

education. The title is referring to current status of my life. It has one more significant meaning – which refers to ‘freedom’. I believe student life is the only life-span wherein a person can express his thoughts freely. One can enjoy one’s life without being pressurized by the circumstances and can explore his career path by seeking his interest.

6 Brain Foods to Power up Your

Study Skills

These 6 superfoods are known to enhance brain function and even improve memory. Best of all, they can also help with retention, studying, and, of course, your GPA.

Here are some of the delicious and affordable foods that can really power up your study sessions.

EGGs aka Huevos

There’s a reason why eggs are such an important breakfast staple. They pack quite an amount of choline which is known to be important for memory function and development. They’re also one of the best ways to get lutein and zeaxanthin, which can improve cognitive function. Don’t skip on the yolks! They contain most of the good stuff.

Bonus: If you scramble eggs with some of the next item on our list you will have quite a cognitive pick-me-up!



Avocados

Rich in B, K, B5, B6, and E vitamins, potassium, and folate, avocados



promote oxygenation and blood supply to the brain. They contain healthy monounsaturated fats that help improve brain function, which is great for studying and critical thinking!



Blueberries

These little ones contain compounds called flavonoids that improve cognitive functions, learning, memory, reasoning skills and comprehension. The antioxidants in blueberries stimulate blood flow and oxygen to the brain, which really helps when you’re studying or taking an exam.

The good thing about blueberries is that you don’t have to eat them fresh for the nutrients. Frozen blueberries are just as potent as a fresh ones, so buy in bulk and keep in your freezer for a quick snack or a smoothie.

Broccoli

This stalking hulk is high in fiber, vitamins K, C, A, B6, and potassium.



Broccoli is also known to improve cognition and psychomotor behavior. Like eggs, broccoli also contains choline so if you don’t eat eggs then broccoli, or even cauliflower, will be your best bet.



Nuts and Seeds

Nuts! Almonds, Cashews, really any nuts are full of vitamin E, which has been linked to less

cognitive decline as you grow older. They're also full of healthy fats to help you maintain energy levels during that big exam or study session.

Salmon

The brain stores a significant amount of fat, in fact almost 60 percent of it



is collected fatty acids. The brain's fatty acids are docosahexaenoic acid (DHA) and omega-3-primarily found in oily fish. Because your body can't produce DHA on its own, you need to get it from other sources, like salmon! DHA acts as a shell for your neurons or brain cells, which makes the majority of the membrane, the cell's outer coating. These fatty

acids protect neurons from injury, reduces cerebral inflammation, and helps neurotransmitters that tell cells what to do. They're also essential for quick information transfer down to the axon, the neuron's highway. It is important to keep your shell protected so, if you haven't had your salmon for the week, eat some now!

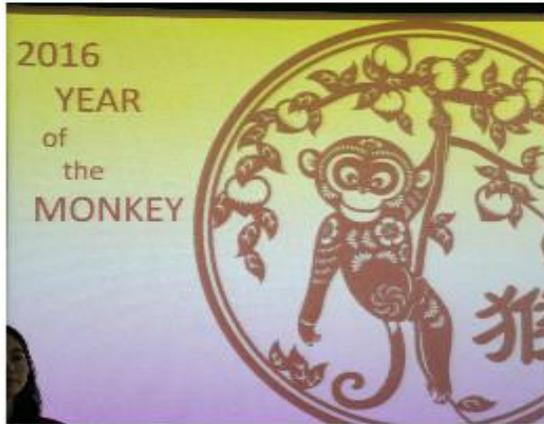
Food for Thought

All of these superfoods help enrich your thinking cap and make for a better study session. Whether you're eating lunch, dinner, or even a snack, you can incorporate any one of these supplements for a healthier mind and body.

College is the perfect time to try new things—especially when these new things enhance your brain power! Don't think, just EAT!

From: CourseHero

Chinese New Year Celebrations



Newsletter Editor:



Monika Katariya