My Internship with CERN

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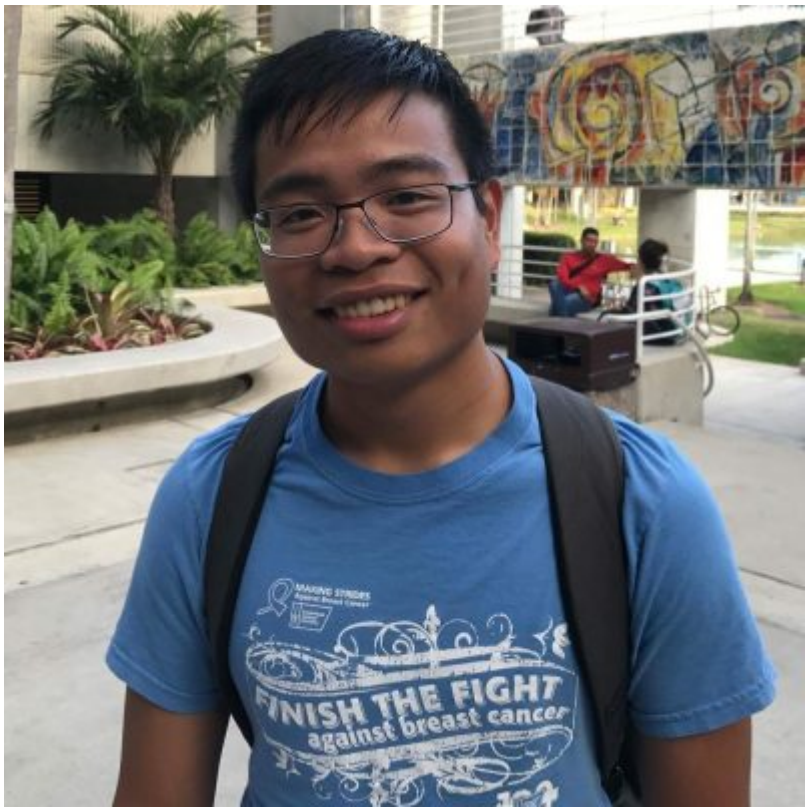

Alastair Paragas

Name: Alastair Paragas

Major: Computer Science (College of Engineering and Computing and Honors College)

Hometown: Originally from Manila, Philippines; currently living in Homestead, Florida

Where will you intern: Starting June 19, I will intern at CERN, located in Geneva, Switzerland. CERN is the home of the hadron collider where the Higgs-Boson particle was discovered. Another great development at CERN was the creation of the modern internet – the world wide web, with web pages as accessible documents through HTTP (HyperText Transfer Protocol), as developed by Tim Berners-Lee.

Though CERN is in Geneva, I will be living in Saint Genis-Pouilly, France. Saint Genis-Pouilly is a town on the French side of the Franco-Swiss border, with CERN being on the Swiss side of the border. Luckily enough, the commute is only 2 miles long and is quite permissive because of the relaxed borders between the two countries due mostly in part to CERN's importance to the European Union as a nuclear research facility. As such, I get to cross the border twice a day!

What do you do there? I will be doing research and actual software engineering work with CERN's distributed computing and data reporting/analytics team, under the mentorship of Manuel Martin Marquez. I will ensure the software that transports real-time data collected from the various instrumentation and devices at CERN don't get lost! I also get to develop software that stores such data into both online transactional and analytical processing workloads.

How did you get your internship? Out of 1,560 complete applications (and more partial applications), I was happy to be chosen as one of three other U.S. students, and in total 33 other students around the world.

I was also lucky to also be accepted as an intern at NASA's Langley Research Center (Virginia), under their autonomous algorithm team and the mentorship of A.J. Narkawicz,

working on the DAEDALUS and ICAROUS projects for autonomous unmanned aerial and watercraft systems. Most of this software supports and runs with/on critical software that operate in all of modern American airports and air traffic control. However, I chose to turn this down for CERN.

How does your internship connect back to your coursework? The internship connects back to what I learned in Operating Systems, Database and Survey of Database Systems; I learned to work with managing synchronization between concurrent processes as well as lower-level software aspects of a computer; how to manage data across various data stores; get an idea of the importance of various features of a relational database; and when not to use a relational database (of which are very few and far-in-between) and so forth.

What about this internship opportunity excites you the most? I am looking forward to living in Europe, completely free, for nine weeks! I never thought it would be possible for me to travel around the world in such a capacity – and for that, I am very grateful.

Coming from a poor background as an immigrant, I would never think it possible to be a citizen of the United States, much less, be able to do things like this.

What have you learned about yourself? I learned that just like always, I am cheap and would like to live on the bare minimum. Even in my previous internships, I remember calculating my grocery costs to ensure that they were optimal and that I wasn't breaking the budget, even if I can afford the cost and I am already starting to suffer looking around at food prices at local stores in the area.

How will this internship help you professionally? I expect that just like my internships at Wolfram and **Apple**, I can network with highly intelligent people coming from diverse fields of study, ranging from physics, mathematics, mechanical engineering and computer science. I am always humbled working with behemoths from their respective fields, living and working on the shoulders of giants.

What advice do you have for others starting the internship process? This is my third internship. I interned at Wolfram during my sophomore year in Waltham, MA, building a research project utilizing Wolfram technologies. **I also completed an internship at Apple during my junior year as a software engineer** in Cupertino, CA, building real-time streaming and batch data processing and reporting softwares in Apple's Internet Software and Services Department.

At our club – Association for Computing Machinery at FIU – we've also managed to create a community of highly successful and motivated students doing internships this summer at prestigious companies (all software engineering roles at companies like Chase, State Farm, Target, MathWorks and etc). We have weekly workshops on machine learning, big data, web/mobile application development, programming languages and a lot of other real-world engineering principles that escape the more academic theory of the computer science/information technology curriculum.

We also get tons of our members to come to hackathons with us, whether by getting their travel expenses reimbursed or carpools! Considering that we are club officers, we don't get

paid for the services we do for the club – we're seriously and passionately committed and do care about getting as many students into the level of expertise and careers they want for themselves.

Anything else you'd care to share? On a more personal note, I would also like to say that just like everyone else, I have had bouts in my life where I felt like I was not accomplishing anything and also suffered from the emotions that come with that. It is important to never place someone on a pedestal while seeing yourself as little. However hard those moments may hit, I consider it highly important to re-evaluate and to emphasize to yourself the importance of working harder and fighting against possible temptations and vices that may result from such emotions and impulses; the idea of not giving up is all the more important.

Personally, I was able to fight through this by being a part of my local Marine Corps' DEP (Delayed Entry Program) program, under the mentorship of Sgt. Ariel Tavarez, where I was able to reflect, get inspired and work through grueling physical exercises with people who have made an impactful change in their lives. Different solutions work for different people, but the one thing that stays true across all these, is to always stay your course.

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