

# JOEL MALERBA

<http://joelmalerba.com> | (518) 881-8563 | malerba423@gmail.com

## EDUCATION

### University of Miami

B.A. in Computer Science, B.S. in Finance

Minor in Graphic Design

Coral Gables, FL

Expected - 5/13

- **GPA:** 3.88/4.00; **GRE:** 166 Quantitative & 159 Verbal

- **Intended Graduate Study:** Computer Science

- **Related courses:**

Calculus I & II, Discrete Math,

Programming I & II (Java),

Programming in Visual Basic

Computer Organization & Architecture

Software Engineering,

Data Structures & Algorithm Analysis,

C Programming & UNIX,

Theory of Computing,

Java Collections Framework

Coding Practicum,

## LANGUAGES & SOFTWARE

- **Programming Languages:** Java, C, Visual Basic, VBA, R(statistical language), HTML, some JavaScript & JQuery

- **Operating Systems:** Windows, Unix (Fedora and Ubuntu), Mac OSX

- **Other software:** Eclipse, Subversion & Google Code, Microsoft Office, Visual Studio Express, Photoshop, Illustrator

## PROJECTS

- Wrote the game Breakout in Java
- Built an interactive HTML resume with JavaScript, JQuery, and CSS3 transitions. See more at <http://joelmalerba.com/resume1.0.html>
- Wrote a basic Social Network program in Java that stores a profile picture, personal information, friend lists, and status and displays them in a GUI window
- Wrote a program to solve the Tower of Hanoi problem. The program also gives the user the option to play the game until he or she reaches the solution
- Wrote a program that finds the shortest path between any two words of the same length, where each by-word is allowed to differ from its parent word by only one letter
- Solved the first 20 problems on <http://projecteuler.net>

## EXPERIENCE

### University of Miami, Physics Department

Student Researcher

Coral Gables, FL

5/12 - Present

- Hypothesized that the occurrence and accumulation of price fractures in the stock market might be a predictive indicator of market flash crashes and other market events, much like structural fractures lead to the collapse of a building
- Used Microsoft Excel to model market flash crashes on several factors including price, volatility, volume, and the number of fractures preceding the crash
- Conducted analysis of variables across individual stocks and the markets as a whole, which produced results that pointed toward the rejection of the initial hypothesis

### Trusted Alliance Asset Management

Financial Analyst and Modeling Intern

Coral Gables, FL

12/11 - 5/12

- Conducted fundamental analysis of underlying assets of securities and derivatives. Assessed price, sales, expenses, cash inflows and outflows, etc. to determine if the company was in good standing. Analysis was used by managers to determine whether or not to invest in the securities and/or sectors
- Monitored several stocks and indices for Trusted Alliance Management using TC2000 software to take long and short positions when certain conditions were met
- Updated Financial Models to reflect new market information using point and figure charting and other Dorsey Wright & Associates resources which improved Company's management of client's portfolios

### Liberteks Inc.

Marketing and Graphic Design Intern

Albany, NY

5/10 - 8/10

- Rebranded Liberteks' logo and advertising campaign using Adobe InDesign and Illustrator to create a clean and professional company identity
- Worked as part of a team to organize publicity efforts using email, flyers, and social networking sites such as Facebook and Twitter to promote small business convention held by Liberteks
- Drafted whitepaper to address the issue of rebranding Liberteks' identity and to present our solutions

### Ultimate Frisbee Club

President, Co-Captain

Coral Gables, FL

8/11 - Present

- Researched tournament dates, tournament entry fees, hotel locations, players' availability to travel, and transportation costs to meet entry deadlines and build a tournament schedule that fits the team budget
- Planned team workouts and drills to get players in the team in the best shape possible for tournaments

Prompt: How will your personal qualities influence and contribute to the RIT community?

I have always been a good problem solver. From building forts and traps in the woods when I was a kid, to insisting that my parents not call the electrician because I wanted to fix the wiring in the ceiling fan, to constantly modding my phone or my computer, to doing all my bike repairs myself, to spending down time solving problems on projecteuler.net, I have always enjoyed building things, solving problems, and trying to make things work. My love of problem solving led to a natural interest in math, a subject in which I have always excelled. I also have a strong creative side. I have an eye for detail and an aptitude for art and design. I have always been a stickler for details. If something is right I need to know why it is right or what makes it right. If it is wrong or it doesn't work I need to know why. I was always that kid who asked 'why?'. The union of my interests led me eventually to computer science - a field which resides at the intersection of logic and creativity - where I have since immersed myself. I believe that my problem solving abilities and creativity will allow me to make a positive contribution to the RIT community.

I spent the last summer working in a research position with a professor, Dr. Neil Johnson, in the physics department here at the University of Miami. Dr. Johnson was interested in the behavior of the stock markets with regard to high frequency trading algorithms. He postulated that larger movements in the stock market might be triggered by split second fractures or spikes in a stock's price or several stocks' prices; fractures and spikes which are the result of trading algorithms that try to halt the loss of value by mass selling or try to capitalize on value by mass buying. I worked on the project with Dr. Johnson and two other undergraduates as well as three graduate students. Ultimately our findings seemed to indicate that the larger market movements were the trigger for the hemorrhaging and not vice versa. It was a great experience to work with graduate students and a research professor in that environment. Our work is currently pending publication. I believe that this experience shows my ability to work well as part of a team and to work well in an academic environment. I can bring these qualities to RIT and I believe that they will further enable me to have a positive impact on the RIT community.

I am also a very social person. I like spending time with friends and working with people on projects. I would rather watch a movie or go for a hike with some friends than spend the day playing video games by myself. I like talking ideas over with classmates and discussing the merits and pitfalls of one method contrasted against another. Discussion gives birth to new ideas, and ideas are powerful. At the same time I can work effectively and efficiently on my own and even prefer to work on my own under some circumstances. I like meeting new people and trying new things. I grew up in a small New York town. After high school I wanted to broaden my horizon and my experiences, so I went to the University of Miami where I have now spent the past four years. I have met many new people, made new friends, tried and seen many new places and things, and I have enjoyed every moment of it. My social nature reflects my adventurousness, my ability to get along well with others, my openness to new ideas and to criticism, and my willingness to take on new challenges. I believe that these qualities and my ability to adapt to change will allow me to make a positive difference in the RIT community both academically and socially/extracurricularly.

I am a person who values friendship. I believe that friendship means that you can turn to someone when you are concerned without having to think twice about it. It means that when a serious situation arises, you know without a doubt that your friend will have your back. It means that you work through the bad and enjoy the good. These are the kinds of relationships that I try to build and that make life as great as it often is. So much of life is about sharing moments, it would be a shame not to have someone to share them with. I

believe that friends are friends, not just friends in passing. I will be in touch with many friends from Miami for a long long time to come. I hope to build similar friendships during my time at RIT.

I also believe that I am an intelligent, insightful, quick thinking, and thoughtful person. These four qualities combined give me a high degree of adaptability. I learn quickly in a new environment. I am confident I can work effectively as a Graduate Assistant and contribute to RIT's already impressive community. I have worked a service job in the information department at the University of Miami for the past three years. Working in that environment has given me lots of experience in helping students, faculty, parents, and visitors find solutions to questions they may have. I have learned how to handle some tricky situations and circumstances when students are upset, worried, or angry. This involves remaining calm, listening to what they have to say, and knowing when to ask for help from a supervisor or an expert in a particular matter. One of the aspects that I like most about my job is that I am located in the University Center, at the heart of campus. During a regular day of work I get to see hundreds of faces and help dozens of people with the various problems that they present to me. I enjoy a dynamic environment in which I encounter different people and the opportunity to perform a variety of tasks. This is the type of experience that makes me a good candidate for the Community Advocate position.

I believe that my values regarding friendship, my thoughtful nature and my ability to work well with others, my problem solving abilities and creativity, and my research experience and background in computer science not only uniquely qualify me as a candidate for the community advocate, student conduct, and technology GA positions, but also put me in a good position to make a positive contribution to the RIT Community.

Prompt: How has your prior experiences prepared you for this assistantship opportunity?

Tutoring student athletes at the University of Miami has been a fun and valuable experience. The relationships between myself and the student athletes that I tutor are symbiotic – that is, the relationship is beneficial to both parties. The program allows me to tutor students in subjects in which I have previously gotten an 'A-' or better. Once I am paired with an athlete, it is entirely up to us to schedule meeting times and make the most of sessions. I take great pride in my work as a tutor. I am able to work with a number of student athletes each semester to not only help them achieve a better understanding of the course content but also to encourage them, inspire them, and to make them believe that they can do well in their classes. I make myself as available as possible and check in with them frequently to make sure they are doing alright, to congratulate them when they do well on a test, and to talk to them when a test did not go so well. I honestly feel sometimes that I am as excited to see them succeed as they are excited about it themselves. This leads me to the second thing that I love about the program: I am able to meet and become friends with some amazing people. Our relationship is not strictly business, it is often more than that. It tends to become a friendship. I believe I derive as much educational value out of the process as the student athletes do. Not only am I able to help them, but tutoring also helps me to solidify course material in my mind. Learning a concept affords you a certain level of understanding. When teaching someone else, you learn the material in more depth and make extra connections that you might have missed the first time. I hope to develop similar relationships in my interactions with students at RIT.

I joined the Ultimate Frisbee team at the University of Miami during my first semester as a freshman and have been very committed to the team ever since. During my junior year I served jointly as the President of the team and in my junior and senior years I have been a co-captain. Both roles have demanded significant dedication and leadership. As President I was responsible for a number of administrative duties to ensure that the team met all school requirements for student organizations. These responsibilities, among others, included the following: I was in charge of dealing with the Wellness Center to reserve the team a regular spot on the intramural fields. I was accountable for gathering player signatures and registering the team with the Committee on Student Organizations (COSO). I was also in charge of contacting the directors of the scheduled tournaments and registering the team for each tournament. The team receives a certain level of reimbursement from the school, mainly for travel expenses and occasionally for hotels. As the President it was my duty to remind players to save their gas and hotel receipts, which I would later submit to the Student Activity Fee Allocation Committee (SAFAC) for reimbursement. On top of these duties I was responsible for reminding all players to register with USA Ultimate (USAU), formerly the Ultimate Players Association (UPA) so that they would be eligible to play in tournaments. I believe that my organizational skills will help me in my activities at RIT.

My responsibilities as a co-captain of the team are equally weighty. The other captain and I are responsible for planning practices and scrimmages. We decide which drills and workouts will be best. In the beginning of the season we focus more on teaching the fundamental skills to new players. As the season progresses we start to shift the focus to conditioning to make sure players are in their best shape possible. It is a coordinated effort and we meet weekly to talk about the next week's practices and upcoming tournaments. One of my favorite parts of captaining is when we travel to tournaments. Myself and the other captain put a lot of effort into generating excitement at tournaments. The team does its best when everyone is excited to play and the intensity is high. Through pre-game cheers and game-time pep talks we are able to really up the level of intensity. It makes for both a fun experience and a greater level of team success. I also enjoy the fact that I have younger players looking up to me as a captain. I am able to lead both by example on the field and by explaining plays and formations. Myself and one of the other veteran players often meet at additional non-scheduled times with the freshmen and new players to work on their throwing mechanics. Being a captain has been a very rewarding and valuable experience; not only have I had a lot of fun but it has also helped me develop into a leader. I hope to apply these same leadership skills toward my responsibilities at RIT.

In fifth grade I was diagnosed with Type I diabetes. It was not something that I asked for, nor did I believe it fair, but it nonetheless has required me to develop significant discipline, control, and management skills. It has made me keenly aware at all times of the potential for low and high blood glucose levels. Before I go on a road trip, or for long bike ride, I always check my blood sugar level and bring a supply of glucose and insulin with me. Even simple things like going to class, going for a hike, and driving to work – things that most people can do on a whim and without much thought – I have to think about and prepare for accordingly. Every time I get in the car I must take the precaution of bringing food and insulin. It is an unfortunate reality but it has made me a very perceptive and aware person. This discipline that has been required of me has become a positive part of my personality. I am very aware of my surroundings, my responsibilities, and my deadlines. Diabetes and the discipline and awareness that come with it have contributed to the set of experiences and qualities that make me an effective leader.

I would also like to point out my educational background in Computer Science and my interest in front-end and back-end web development, as well as my current Masters Track in Computer Science. I believe that these experiences make me an excellent candidate for the Technology GA position and that the experiences described above make an excellent candidate for the Community Advocate and Student Conduct GA Positions as well. For more information you can see my HTML resume online at my personal web page: <http://joelmalerba.com/resume1.0.html>.