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Interests

- Distributed Systems, Software Engineering, Information Security Web (Backend and Mobile) Development, Physics, Programming Challenges, Data Structures and Algorithms, MOOCs, Computational Art, Fractals.

Work Experience

EAFIT University (January 2012 - December 2012) ***Teacher Assistant***

- **Introduction to Computer Science (2012-1):** Teaching Object-Oriented Programming patterns, solving and implementing math problems in Java, recursions, program flow control, and Java GUI programming. Also helped students through the course project, a two-player *BlackJack* game, applying all those concepts.
- **Data Structures and Algorithms I (2012-2):** Teaching recurrences, complexity notation of algorithms, sorting algorithms, and the use of trees and other basic data structures to solve classical CS problems. Also helped students through the course project, a *Checkers* game using decision trees that played optimally.

EAFIT University (November 2014 - Current Date) ***Research Assistant***

- **Information Security Research Team:** Learning about both the attackers' and defenders' perspectives, applying such knowledge in the creation of strategies and usage of open source tools for defense and forensics of attacks carried out against the university and important government clients that source information system services within it. Earned a place in this team thanks to my previous voluntary and proactive work on detailing critical vulnerabilities on several information systems the university has, which carried high impact on students/employees/courses information leaking and privilege abuse on platforms' functionalities.

Education

Computer Science, EAFIT University (Medellín, Colombia) 2011-2016 (Expected)
Current Cumulative (GPA): 4.12 (5.0 scale)
Relevant coursework: *(Work for some of these can be found on my Github)*

Computer Science: · Computer Graphics · Computer Architecture · Computer Networks · Databases · Data Structures and Algorithms · Distributed Systems · Formal Languages and Compilers · Information Systems · Numerical Methods · Operating Systems · Programming Languages · Programming Paradigms · Software Engineering · Systems Thinking · Technology Integration Project · Topics in Computer Science · Entrepreneurial and Corporate Culture

Mathematics: · Calculus · Physics · Logic · Linear Algebra · Discrete Maths · Statistics

Organizations: *Competitive Programming Seminar:* lecturer and participant.

Independent Coursework: · Cryptography · Software Security · Planetary Sciences Fundamentals · Astrophysics and Stellar Formation Fundamentals

Personal Projects (and more, at Github!)

UrbLancer (2015 - current)

- Hybrid mobile app developed using **NodeJS** for the backend and **Ionic + AngularJS** for the frontend, that aims to provide a market place for users to offer common services *(locksmiths, plumbing, deliveries, electricians, etc)* and for users to request such services, as a freelancer look-up in an urban environment *(hence the name)*. The idea is for the system to make automatic matches of requests and offerings based on filters by a set of parameters, such as geo-location *(distance)*, requester/offerer ratings, and a subset of tags previously defined in each category that can be selected to refine the matching process, to help people save time when looking for a service and bring them the most optimal provider instead of trying blindly in a phonebook.

CraZe (2012)

- Open Source app developed as a hobby that makes use of trigonometry, linear algebra and geometry, allowing users to make nice, colorful, complex and potentially psychedelic drawings. Users can also choose to let the application draw on its on, allowing for trippy experiences! Developed natively for Android using **Java**, and for browsers using **HTML5 + NodeJS** *(for allowing multiple users to draw concurrently)*. Its available for free in the Google Play Store with over 50000 downloads!
- **Android link:** `https://play.google.com/store/apps/details?id=com.zubieta.craze`
- **Desktop link:** `http://craze.herokuapp.com`
- **Image Gallery:** `http://instagram.com/crazeapp`

KlaviKol (2013 - 2014)

- Open Source app that aims to teach children to play the piano, or incite them to use it playfully, in a very colorful way. It was developed using **Processing**. The piano keys on the screen light up in different colors accordingly to the note, with some animations happening on the background depending on the notes pressed. The learning mode involves keys lighting up on their own in the screen, requiring the user to press that same key fast in the physical keyboard. A **KORG nanoKEY** *(or other MIDI keyboard)* is needed.

Skills and Tools

- Proficient with algorithmic thinking and problem solving.
- Most experience using: *C++, Java (Desktop), Javascript, NodeJS*
- Moderate experience using: *Processing, HTML5, AngularJS (Ionic Framework), Go*
- Familiarity with database design and usage with: *MySQL, SQLite, MongoDB*
- Used for university projects: *Prolog, Haskell, LISP, NASM, MPI*
- Tools I feel comfortable with: *OSX, Git Version Control, Sublime Text, Photoshop*

Languages

- Spanish - Native (Colombia)
- English - Excellent (TOEIC 965)
- German - Basic (Limited Reading)

Achievements - University

Principal Personal Recognition and Job Offer, EAFIT University, June 2014

- Personal recognition and job offer from the Principal due to proactively and voluntarily searching for vulnerabilities in the several information systems the university has for public and student access, which carried high impact on students/employees/courses information leaking and privilege abuse on all platforms' functionalities, detailing them technically and non-technically in White Papers presented to the interested parties for fixing, the issues being escalated until I reached the Principal, who acknowledged the issues in the university's platforms, the efforts I had done reporting them, and offered me to join the Information Security Research Group of the university, where I currently work.

Best Application Design Award, BB10 Jam World Tour Hackathon (Medellín), October 2012

- Our team earned this award for the making of the *FormulApp* application. It was made for helping children and adolescents learn formulas from several mathematics, geometry and sciences topics, by inputting values into visual representations of whatever the formula was about, and finding the missing values, together with an explanation of it. I was in charge of programming the app and designing its visual interface. We choose to use the Android SDK and BB10 porting tools instead of making it BB10 native.

ACM-ICPC South American Regionals, Participant, November 2014

- I was part of one of the two teams from EAFIT University that participated at the South American North ACM ICPC regionals in 2014, as well as several local contests.

1st Place, Entrance Examination, National University of Colombia, May 2014

- 1st place in the entrance examination for the **Engineering Physics** undergraduate program, retired after one semester.

1st Place, Entrance Examination, University of Antioquia, May 2013

- 1st place in the entrance examination for the **Physics** undergraduate program, retired after one semester.

Achievements - School

"Distincted Graduate", San Ignacio de Loyola School, 2010

- Graduated with honors due to outstanding internal and external achievements in different fields, such as academic performance *(inside the school's own courses and in external olympiads)*, artistic/aesthetic qualities *(inside the school's own courses and expositions)*, making the design of the 2010 Graduate Students Picture Board, and highlighted communicative skills for writing in the school's newspaper *(about technology, music, and career choosing motivation)*.

Finalist, "Medellin Knowledge Olympiads", Ministry of Education, 10th grade, 2009

- **Full Scholarship.** City-wide maths and languages contest for 10th/11th graders (40000+ students), where all 5 finalists earned a full scholarship for any undergraduate program in any university in the city plus an economic stimulus of 4000usd for study related expenses, all this sponsored by the government. Only 10th grade finalist. **3rd place among the 5 finalists.**

Finalist, "Colombian Physics Olympiads", Antonio Nariño University, 10th grade, 2009

- **Honorable Mention.** Country-wide physics contest for 10th/11th graders.

Finalist, "Antioquian Maths Olympiads", University of Antioquia, 10th grade, 2009

- State-wide maths contest for 10th/11th graders. **4th place among the 5 finalists.**

Finalist, "Colombian Sciences Olympiads", Antonio Nariño University, 8th grade, 2007

- Country-wide biology, physics and chemistry contest for 8th/9th graders. **4th place among the 5 finalists.**