Tudor-Gabriel Vîjială

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Education

Oct 2015 – June 2019 **BSc in Computer Science** *Politehnica University of Bucharest, Faculty of Automatic Control and Computer Science*, Bucharest
3rd year in a 4 years degree. GPA: 9.59 / 10

Sept 2011 – June 2015 **High School Diploma** *National High School "Mihai Viteazul"*, Bucharest
Baccalaureate: 9.75 / 10

Work Experience

Feb 2017 – Present **Liquid Investigations** *Free & Open Source Project*, Freelance, Bucharest
`https://liquidinvestigations.github.io/`
The Liquid Investigations project aims to prototype and test an open source digital toolkit to facilitate inter-organizational investigative collaborations, on ARM-class devices. When fully developed, the kit will allow for distributed, non-hierarchical data analysis, sharing, annotation, and chat.

- Drafted and polished architecture documentation for the project
- Implemented automated software provisioning using Ansible
- Helped develop a virtual machine management system for running automated builds tests, by scripting QEMU with Python
- Wrote automated acceptance tests using Selenium to script browsers
- Managed a Contrinuous Integration workflow that uses Jenkins
- Integrated several third-party web applications with OAuth2
- Wrote management scripts for ARM boards to automate WiFi client and hotspot configuration, DNS and mDNS configuration, and reverse proxying using nginx

July 2016 – Oct 2016 **Research & Development Intern** *Fotonation*, Full-Time, Bucharest
Researched, reviewed and implemented various Reinforcement Learning (RL) architectures and algorithms.

- Developed a small RL framework in numpy on Python 3 to benchmark different algorithms on specific problems
- Implemented a set of generic RL algorithms in C++11 for internal use

May 2016 – Present **Hoover** *Free & Open Source Project*, Freelance, Bucharest
`https://github.com/hoover`
Hoover is a search and discovery tool for large heterogeneous collections of documents.
It's designed to aid the work of investigative journalists.
I mainly work on the forensics backend, written in Python 3.

- Integrated metadata extraction and language detection by using Apache Tika
- Implemented email parsing and analysis using Python's email library
- Integrated the analysis of various file formats and archives through external dependencies
- Ported the user interface from riot.js to React.js

Sept 2015 – Dec 2015 **Android Developer** *Tiera IT Solutions*, Part-Time, Bucharest

Improved knowledge of the Android ecosystem. Worked with numerous libraries used for networking, content provider usage, object relational mapping, UI & design, image caching and offline maps.

- Optimized a contact sync app by caching data and limiting the number of Android content provider operations
- Developed a toolset used to download map data from OpenStreetMap and prepare it for offline application usage
- Wrote REST APIs in PHP and helped the team with web server maintenance tasks

Projects and Contests

Mar 2016 **Google Hash Code** *Programming Competition*, Final Round, Paris

Hash Code is a team-based programming competition organized by Google. Our team reached 12^{th} place out of the 50 teams competing in the finals.

- Wrote a testing and scoring framework in Python that scores our team's solutions
- Helped prototype and deploy a Django web server that would store our solutions
- Assisted my colleagues in implementing and debugging the problem solution in C++

May 2015 **Chatbox** *Professional Certification Project*, Bucharest

`https://github.com/gabriel-v/chatbox`

- Developed a message passing backend that is based on WebSockets, implemented in PHP and MySQL
- Implemented a fake data generator in Python 3 to stress-test the database
- Wrote a statistics module that creates beautiful graphs from SQL queries

Mar 2015 **MobilPRO** *Programming Competition*, Bucharest

My team won First Prize with a system to grade multiple-choice tests, on-site, using an Android application, using the device's camera.

- Implemented the video processing module using OpenCV with Java bindings
- Designed the multiple-choice exam sheets and implemented the JavaScript module that generates them
- Wrote the Android UI & helped with the back-end database design and REST API

Programming Skills

Confident	Python 3, C, C++, Java and Bash
Good	JavaScript, Matlab and SQL
Medium	x86 assembly, Verilog, Haskell, Common Lisp, Racket and PHP 5
Technologies	Django, Elasticsearch, Ansible, Linux, Android SDK, Git, LaTeX, the `vim` editor

Relevant Courses

Local Computer Networks

Parallel and Distributed Algorithms

Algorithm Design & Algorithm Analysis

Data Structures

Numerical Methods

Computational Physics

Advanced Mathematics

Developing Android Apps (Udacity)

Machine Learning (Udacity)

Oracle Database Design and Programming with SQL

Academic Accomplishments

2017 **ACM ICPC - Bucharest Subregional Contest** *ranked in the first third*

2012 – 2015 **Regional Programming Olympiad** *prizes in the 9^{th}, 11^{th} and 12^{th} grades*

2013 – 2015 **National Physics Olympiad** *medals in the 10^{th} and 12^{th} grades*

Language Skills

Romanian Native

English Proficient

French Basic