MADALINA-IOANA SAS

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WORK EXPERIENCE

Netcraft — *Internet Services Developer*

OCT 2017 - PRESENT | Perl, Javascript, SQL, PHP

Improving and automating existing systems, working in content filtering and countermeasures against phishing sites and malware.

King's Clinical Trials Unit — *Clinical Software Analyst Assistant*

APR 2016 - DEC 2016 | .NET MVC, SQL, iOS, REST

Full-stack development of a complex network of bespoke systems for building clinical trials (based on web and mobile), including automating the randomisation process, treatment management, and user management systems, as well as validation of data and trial design.

King's Clinical Trials Unit — *Support Programmer*

OCT 2014 - APR 2016 | .NET, SQL, Wordpress

Designing and writing web applications, debugging, testing and evaluating. Industry-standard documentation and medical SOPs.

Imperial College London — *Undergraduate Researcher (UROP)*

AUG 2015 - OCT 2015 | Program logic and proof

Learning a program logic for Time and Data Abstraction (TaDA), based on Hoare, separation and temporal logic with the purpose of proving the partial correctness of concurrent data structures such as Red-Black Trees.

Google — *Software Engineering Intern*

JUN 2014 - SEP 2014 | Java, Guice, Clojure JS

Pair programming project involving the implementation of a set of dynamic web pages to change and update settings in the cloud.

Freelance — *Web Designer/Developer & Photographer*

2010 - PRESENT | HTML/CSS/JS, various web platforms

Undertaken multiple projects and supported e-commerce startups with their initial platforms as well as their branding and image.

SKILLS

Software development
Web, Windows, Linux

Artificial Intelligence
Natural Language Processing, Neural Networks, Logic-Based Learning, Bayesian Networks

Security & reliability
logic proof and verification, static analysis, networking, cryptography

Web design & development
HMTL/CSS/Javascript, Jekyll, ASP.NET MVC, Wordpress

Database Administration
MySQL, MSSQL

Design & graphics
Photoshop, Illustrator, type design, branding, traditional and digital illustration

LANGUAGES

Python, Perl, C#, Haskell, C++, C, Javascript, SQL, Prolog, Scala, PHP

Romanian (native)

English (bilingual)

EDUCATION

Imperial College London, UK — *Computing MEng (Artificial Intelligence)*

OCT 2013 - JUN 2017

A complex and highly challenging computer engineering degree which allowed me to gain profound experience into industry standard programming and software engineering practices. Courses taken include the study of programming languages, operating systems, compilers, networks, security, information theory, software and web development, mathematics, logic, verification systems, Bayesian statistics, cryptography, and machine learning. Completed multiple projects relying on teamwork and agile methodologies.
I was part of the Imperial College Team awarded first prize in the ***InterACE Cybersecurity Challenge 2017.***

Finished a master's thesis on privacy and IP Geolocation, and developed a supporting Windows software.

'Ovidius' Theoretical High-School, Constanta — *Mathematics and Intensive Computer Science*

SEP 2009 - JUN 2013

The programming courses in my curriculum and a two-term course provided by Oracle helped me gain serious experience in C++, C#, SQL, algorithms and object-oriented programming. Also took advanced classes in Mathematics, Sciences, and Humanities. Participation in local and national competitions:

County Informatics Olympiad (OJI) - First Prize
National Applied Informatics Contest (CIA) - Ranked #6
County Mathematics Olympiad (OJM) - Second prize
National Physics Olympiad (ONF) - Ranked #12

PROJECTS

2017 | **SnowWall**— *A visual firewall for the surveillance society (Master's Thesis)*
A Windows-based graphical tool which allows users to visualise the flow of data going out of their machine, with geolocation and organization. Supported by a thesis on privacy research and awarded as a distinguished project.

2016 | **Static Analysis Tool**
A static analysis tool written in Scala which parses a piece of code and transforms it into a logic statement, verifying against a set of pre and post-conditions whether the code is correct.

2016 | **Seek** — *Future Artificial Intelligence*
An Information Retrieval tool capable of extracting text from multiple formats and analysis with natural language processing techniques on large corpora. Can extract, with good accuracy, topics, names, and summaries from text.

2015 | **Doodlr.js** — *Collaborative board drawing web application*
An application built in Javascript with real-time collaborative digital painting features.

2015 | **The Pintos Operating System** — *Implementing OS features in legacy code*
A team project requiring the implementation of the main features of an operating system in C. Contributed with system calls, memory management, thread synchronisation and interruptions.

2014 | **The WACC Compiler** — *Building a compiler from scratch*
Group project. A compiler for a While-like language, implemented in Haskell using Parsec.

2014 | **RaspberryDots** — *ARM Assembler and Emulator*
Group project. An Assembler and Emulator for ARM architecture implemented in C for interacting with a Raspberry Pi to encode a sequence of characters into a sequence of blinks on a set of LEDs.

2014 | **ICHack: Nick** — *Hackathon project involving wearables*
Virtual interactive environment developed in 24 hours in a group of six, using the Unity game engine. Introduces new means of user interaction through eye tracking with TobiiEyeX and hand tracking with a Leap Controller.

2013 | **Computational Morality** — *Research project*
A project about logical models for morality and their use for artificial intelligence. Built a website containing our research using HTML5, CSS3 animations, and JQuery. Awarded best in category, best presentation and best website.

2012 | **Fractalicious** — *physics project*
Exploring iterative generation of fractal structures using graphical libraries available in C#.