Alexander Safatli *July 13, 1990*

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Summary

Recent graduate of a Master of Computer Science thesis program at Dalhousie University. Software developer with a reputation for rigorous thinking and methodological consistency. Looking to start my career in the private sector.

I aspire to learn, design, build, and explore complex computer models. I promise to approach given tasks with my best effort, to be open to criticism and to consider new ideas, and to be someone you can trust to adapt and perform to new situations and technologies.

Education

Dalhousie University   HALIFAX, CANADA

Master of Computer Science   *2014 – 2015*
- Education in Adv. Data Structures, Algorithms, Heuristics, and Natural Language Processing.
- Written a thesis *Sampling Discrete Combinatorial Spaces in Phylogenetics* on combinatorial space visualization and analysis in bioinformatics.
- Published and currently maintain a Python software framework for combinatorial space analysis.

Supervised by Assoc. Prof. Christian Blouin. *Extracurricular*. Computer Science Graduate Society, Executive Secretary for later term of 2014.

Bachelor of Computer Science with Distinction • **GPA 3.8** • **Dean's List**   *2008 – 2013*
- Thorough understanding of computer science fundamentals.
- Further focus on adv. concepts in mathematics (geometry, cryptography, linear algebra) alongside a strong understanding of chemistry.
- Completed individual and collaborative software projects in Java incl. a geo-location mobile game.
- Featured experience working with clients through a Community Outreach program.

Awards. Undergraduate Student Research Award from the Natural Sci. & Engineering Research Council (NSERC) for summer internships in 2009, 2012, and 2013. *Extracurricular*. Computer Science Society, Dalhousie University, Executive Secretary as of 2012-2013; Sodales Debating Society, Executive Secretary in 2010.

Experience

Dalhousie University   HALIFAX, CANADA

Teaching Assistant — *Operating Systems*   *Winter 2015*
Marked software assignments written in C. *Reference*. Assist. Prof. Michael McAllister.

Teaching Assistant — *Principles of Programming Languages*   *Summer 2014*
Marked software assignments written in Scheme and Prolog. *Reference*. Prof. Philip T. Cox.

Teaching Assistant — *Concepts in Computing, Bioinformatics*   *2012 – 2014*
Reference. Assoc. Prof. Christian Blouin.

Research Assistant & Software Developer, Blouin Lab   *2012 – 2014*
Orchestrated work in different areas of bioinformatics. Helped construct Python libraries for geometric morphometric analysis of 2D and 3D biological structures, for molecular dynamics, for protein homology modelling, and for the parsing of essential file formats. Performed a great deal of debugging and restructuring of existing Python code base. *Reference*. Assoc. Prof. Christian Blouin.

Teaching Assistant — *Communication Skills: Oral/Written*   *2012 – 2013*
Marked and helped teach oral presentations and common business document writing. *Reference*. Instr. James Fleming.

Learning Centre Staff, Faculty of Computer Science   *2012 – 2013*
Worked as a tutor at set hours in a faculty help facility for any Computer Science or Informatics undergraduate-level course. *Reference*. Prof. Nauzer Kalyaniwalla.

Research Assistant, White Lab   *Summer 2010*
Worked as a summer research assistant in the Department of Chemistry for a group focused on physical chemistry of materials, and helped write a journal article for the Ashrae 2011 Annual Conference on Solar Panels and the use of Phase Change Materials (PCMs) to store energy. A prototype was helped built for this manner of application for a local facility. *Reference*. Prof. Mary Anne White.

Research Assistant, Wentzell Lab *Summer 2009*
Worked as a summer research assistant in the Department of Chemistry for a group focused on chemometrics and the analysis of chemical data, and helped write a suite of software in Matlab that helped in the finding of genetic motifs in DNA sequences and to evaluate statistical plots of findings. *Reference.* Prof. Peter Wentzell.

Please refer to my Linkedin profile for further details and any relevant recommendations.

Publications

[1] R. Murray, L. Desgrosseilliers, J. Stewart, N. Osbourne, G. Marin, A. Safatli, D. Groulx, and M. A. White, "Design of a latent heat energy storage system coupled with a solar domestic hot water system," in *Proceedings of the World Renewable Energy Congress 2011*, Sweden, May 2011.

[2] A. Safatli, J. S. Hleap, K. Nguyen, and C. Blouin, "Automatic definition of homologous shape descriptors for geometric morphometric data," in *Proceedings of the Dalhousie Computer Science In-House Conference 2012 (DCSI2012)*, Halifax, NS, Canada, Sep. 2012.

[3] J. S. Hleap, A. Safatli, K. Nguyen, and C. Blouin, "Reference matters: an efficient and scalable algorithm for large multiple structure alignment," in *Proceedings of the International Conference on Bioinformatics and Computational Biology 2013 (BICoB 2013)*, Honolulu, USA, Jan. 2013.

[4] A. Safatli and C. Blouin, "Application of ant colony optimization for mapping the combinatorial phylogenetic search space," in *Proceedings of the International Conference on Bioinformatics Models, Methods and Algorithms 2015 (BIOINFORMATICS 2015)*, Lisbon, Portugal, Jan. 2015.

[5] ——, "Pylogeny: an open-source python framework for phylogenetic tree reconstruction and search space heuristics," *PeerJ Computer Science*, in press 2015.

Skills

Technical Knowledge Software design and implementation, with(in) a team. Technical and scientific writing. Adv. experience with Python, Java, C, Objective-C, and Perl. Elementary to intermediate knowledge with C++, C# (.NET framework), Go, Scala, Lua, Prolog, Haskell, Scheme, Matlab, and R. Knowledge of database technologies: MySQL, SQLite, NoSQL. Knowledge of web technologies: HTML+CSS, XML, REST, JSON, JavaScript (jQuery, D3).

Methodologies Have worked with different tools of machine learning incl. support vector machine (SVM) and random forests. Have also done a large deal of information extraction, data classification, data visualization, and data mining using conventional and classical tools.

Natural Languages English *(mother tongue)*, Arabic *(limited working proficiency)*, and French *(elementary proficiency)*.

Open Source Project Contributions

Minor Contributions: Chromium Browser (unit tests).

Interests

Non-exhaustive and in alphabetical order: Art, cryptography, gaming, guitar, music (collecting, recording), open source, philosophy, reading, typography.