Alexander Safatli

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Experience

Optimize AI Technology Solutions — Halifax, Canada

Software Developer — *September 2021 – February 2022*

Worked remotely and part-time to maintain and develop for the SafePath mobile app in Flutter to target both iOS and Android devices. Other responsibilities included managing software deployment for the team.

BeyondTrust — Halifax, Canada

Software Engineer — *January 2017 – January 2018*

Maintained full stack development of a cybersecurity software deployment suite packaged with software used by and marketed to Fortune 100 companies. Angular.js (TypeScript) and Go. Other responsibilities included managing tooling for software deployment for the team via tools like Jenkins and Docker.

Amazon — Seattle, USA

Software Development Engineer I — *December 2015 – January 2017*

Touched both frontend and backend components of the established website and e-commerce platform. Work was done on a team that focused on payment methods and gift card redemption. Coded in Java, C++, Perl, Go, and Python. Also served on-call on a regular weekly basis to monitor and manage the large demand web services that underlie the payments platform.

Watzan, LLC — Halifax, Canada

Software Developer — *June 2015 – January 2016*

Was one of a handful of developers that constructed an MVC architecture which used social media information from hundreds of users to tailor content and search results. This work was done using a mixture of Ruby on Rails, JavaScript, and HTML.

Dalhousie University — Halifax, Canada

Teaching Assistant — *2012 – 2015, 2018 – 2023*

This list is non-exhaustive and omits many introductory computer science courses.

- Algorithm Engineering – Winter 2023. Marked assignments written in various languages that applied course material on real datasets.
- Programming for Business – Winter 2023. Carried out lectures, tutorials, and marked exams and assignments.
- Operating Systems – Winter 2015. Marked software assignments written in C.
- Principles of Programming Languages – Summer 2014. Marked software assignments written in Scheme and Prolog.
- Concepts in Computing, Bioinformatics – various terms 2012-2014. Marked written and programming assignments covering a breadth of topics in computer science and bioinformatics.
- Comm. Skills: Oral/Written – various terms 2012-2013. Marked, help teach oral presentations and common business document writing.

References. Assist. Prof. Michael McAllister, Assist. Prof. Chris Whidden, Prof. Philip T. Cox, Prof. Christian Blouin, Instr. James Fleming.

Research Fellow, Whidden Lab — *2021 – 2023*

Continued coursework and thesis work for a doctorate degree. Research involved combinatorics and phylogenetics.

Research Fellow, NICHE Research Group — *2018 – 2019*

Started research for a doctorate degree in the areas of health informatics, knowledge management and the semantic web.

Research Assistant, Blouin Lab — *2012 – 2014*

Took major part in writing 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. These software libraries are used regularly by other graduate students in the laboratory for their projects. *Reference*. Prof. and Associate Dean, Academic Christian Blouin.

Research Assistant, White Lab *Summer 2010*

Summer research assistant position in the Department of Chemistry for a group focused on physical chemistry of materials. 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. *Reference*. Prof. Mary Anne White.

Research Assistant, Wentzell Lab *Summer 2009*

Summer research assistant position in the Department of Chemistry for a group focused on chemometrics and the analysis of chemical data. Wrote 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.

Education

Dalhousie University HALIFAX, CANADA

Doctor of Philosopher in Computer Science • *in-progress* *2019 – 2023*

- Education in Adv. Algorithms, Research Methods, and Visual Analytics.
- Completed course requirements and partial requirements for thesis and seminar work on combinatoric algorithm optimization in phylogenetics.

Supervised by Assist. Prof. Chris Whidden.

Master of Computer Science • GPA 4.3 *2014 – 2015*

- Education in Adv. Data Structures, Algorithms, Heuristics, and Natural Language Processing.
- Wrote 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. Dean, Academic Christian Blouin. *Extracurricular*. Computer Science Graduate Society, Executive Secretary for later term of 2014.

Bachelor of Computer Science with Distinction • GPA 3.8 (Major 4.0) • Dean's List *2008 – 2013*

- Thorough breadth of computer science fundamentals without specialization.
- Further focus on mathematics (geometry, cryptography, linear algebra) alongside 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.

Publications

[1] R. Murray, L. Desgrosseilliers, J. Stewart, *et al.*, "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, "Sampling discrete combinatorial spaces in phylogenetics," M.S. thesis, Dalhousie University, Apr. 2015.

[5] 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.

[6] ——, "Pylogeny: An open-source python framework for phylogenetic tree reconstruction and search space heuristics," *PeerJ Computer Science*, vol. 1, e9, 2015.

Skills

Technical Knowledge

- **programming languages**: *Advanced*. Python, Go, C++, C, Java, TypeScript, C# and Lua. *Intermediate*. Ruby, PHP, Objective-C, Perl, Haskell, Scheme, R and Prolog.
- **database technologies**: MySQL, SQLite, Microsoft SQL, PostgreSQL, MongoDB and DynamoDB.
- **web technologies**: HTML+CSS, XML, REST, JSON, Vue, ASP.NET, Ruby on Rails, Flutter, Hugo, Spring Web MVC, Mason, Django, Angular and Node.js.
- Experience with technical writing, documentation, and journal publication.

Methodologies Have worked with different tools of machine learning incl. support vector machine (SVM), random forests, deep neural networks (DNN) and k-Nearest Neighbors (k-NN). 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*).

Projects

Operating System (2014-2015) UNIX-style x86 system with bare bone essentials. C and Assembly.

***Pylogeny* (2016)** Framework for combinatorics in phylogeny. Peer-reviewed and published in *PeerJ*. Python.

ABeRMuSA (2016) CLI that performs multiple 3D protein structure alignment. Python.

Interests

Non-exhaustive and in alphabetical order: Music, art, cryptography, writing, open source, philosophy, reading, tabletop roleplaying, typography.