SOFTWARE DEVELOPER

1QBit is dedicated to solving the world's most demanding information challenges by applying breakthroughs in computation to machine intelligence and optimization science through a widely accessible quantum-ready software platform.

We believe that quantum technologies will form the next pillar of computational progress. We research, benchmark, and build software development kits, online platforms, and applications that make the power of quantum computers accessible to researchers, developers, and industry-leading organizations, so they can solve their most difficult problems in fields such as optimization, simulation, and machine learning.

As an interdisciplinary team of world-class mathematicians, physicists, engineers, operations research scientists, software developers, and quantum computing experts, we share a curiosity and drive to uncover new ways of solving currently intractable problems using advanced classical and quantum systems.

Our work is guided by a shared set of values focused on five fundamental principles:

1. Audacity – A drive to pioneer and apply new methods. To dream without limit and then do the hard work of bringing your ideas into reality.

2. Open Thinking – A belief in the sharing of ideas. To approach each exploration with a receptive mindset and collaborate openly to produce the best possible results.

3. Interdisciplinary Collaboration – A respect for the diversity of people, backgrounds, and skills. A wide range of perspectives reveals a more complete landscape and yields deeper insights.

4. Ownership – A feeling of pride in the work of the team and a deep sense of purpose and accomplishment from your contribution.

5. Beginner's Mindset – A desire to improve as an expert while retaining the curiosity and openness that inspired you to begin.

YOUR ROLE

As a member of our Software Development Team, you will build the infrastructures and products that solve intractable problems using the computational possibilities of newly emerging quantum processors and simulators. Your object-oriented design/programming and test-driven development and integration, along with thorough documentation and maintenance, will bolster the team's responsibility of delivering highly optimized and maintainable code.

Operating in 1QBit's Agile team structure you will largely drive your own schedule and projects. You'll use the Scrum methodology to take an ownership role in autonomously managing your work and supporting your team in finishing project Sprints. You'll contribute to 1QBit's continuous improvement through Sprint Retrospectives and by providing input and ideas on every aspect of how our company operates.

Pair programming will immerse you in our code from day one, and will continue to help you solve hard problems through collaboration. You will also join multidisciplinary teams to explore the solution space of open questions in the field of quantum computing and consider the software implications from the very start of any project. You will contribute to brainstorming sessions to design new features and will then own a full cycle of development: from writing unit tests, to design and programming, to handling Docker containers, to testing, documentation, debugging, and maintenance. Reviewing team-members' code for design and efficiency will be achieved through your efficient use of JIRA, GitHub, Confluence, and Slack.

WHAT YOU'LL BRING

Members of our team bring a confluence of personality, skills, and intent that contributes to their individual development and our collective growth as an organization. Here is the complementary knowledge and mindset you'll bring to our team.

- Knowledge of modern C++ concepts like smart pointers and move semantics.
- Skilled in software development in Python.

- Knowledge of object-oriented design patterns.
- Familiarity with container frameworks like Docker.
- Experience with cloud and distributed computing concepts.
- Versant in implementing and benchmarking high-performance optimization algorithms.
- Asks for and acts on feedback to improve performance and, in turn, constantly provide constructive input to team members.
- Proactively seeks out opportunities to help move projects forward and contribute to their improvement – whether it's a project you're working on or someone else's you become familiar with.
- Voraciously learns about new trends, tools, and technologies, and continually considers how these will influence our projects, what the implications are, and what opportunities they will bring.
- Fortifies team unity and effectiveness through the sharing of information and expertise, and prioritizes team success in problem solving over any individual role in a project.
- Autonomously drives own projects forward and determines when and with whom to share information to provide regular, consistent, and pertinent information to the team members who need it.

WHO YOU ARE

You share our belief that principles, not policies, enable individuals and teams to apply their unique lens in making decisions. Like all 1QBit team members, you thrive in our flat hierarchy of empowered individuals. You embrace the rigorous examination of thoughts and work by diverse minds from multiple disciplines because you know it uncovers deeper insights and produces robust results. You believe there is no failure in exploration because new breakthroughs often require rigorous examination of multiple paths before a conclusion is reached. You have a desire to apply yourself to purposeful work that is inspiring, meaningful, and fun, to create value for the world by advancing the ability to solve complex problems. You have a relentless curiosity for exploring new methodologies and you have an intrinsic drive to architect the foundation of the quantum ecosystem because you love the challenges and understand the rewards that the next paradigm of computation holds.

Works Cited

"Software Developer." Job Opportunity. 1Qbit. N.p., n.d. Web. 27 Mar. 2017. <http://1qbit.com/careers/current-openings/jobs/588936/?gh_jid=588936

Travis Gritter
1234 Pleasant Street
Vancouver, BC V1X 2Y3
Phone: (604) 123-4567
Email: travis.gritter@my_email.com

April 3rd, 2017

1QBit
458-550 Burrard Street
Vancouver, BC V6C 2B5

Dear Hiring Manager,

As the Theory of Computing is my favourite subject within Computer Science, I am very excited to be applying for this position. I developed an interest in the Theory of Computing during a Philosophy of Logic class I took during my previous degree where the major focus of the course was learning about Turing Machines. In this class there were numerous assignments in which we had to construct various Turing Machines to solve a wide variety of functions. As I became more and more impressed with the simplicity and power that these devices had, we eventually reached the subject of the Universal Turing Machine: a single Turing Machine that can simulate any other of the infinitely possible Turing Machines. Upon learning about the concept of the Universal Turing Machine I immediately understood why modern computers worked and the incredible amount of potential they had. This was a significant moment in my life as it influenced me to enroll in the Bachelor of Computer Science program to learn more about computers and Turing Machines.

During this program I learned about many valuable topics that will lead me to be a successful candidate at your company. I learned about object-oriented design principles by building a transit planning app using concepts like abstraction and encapsulation. I learned about the Agile team structure by using scrum meetings and sprint deadlines to build a comic-making website with a team of five classmates. However, my favourite topic was what I learned about in my Theory of

Computing class that I just took this past semester. In this course we not only studied Turing Machines, but many other topics as well including nondeterministic automata, complexity classes and quantum pseudo-telepathy. I found my favourite part of the course was going to the TA's office hours to solve questions I found challenging. As the assignments were usually quite difficult, there were often many students there who were struggling with the same questions as me. However, by talking with each other, and by drawing diagrams, and re-reading theorems, and looking up examples, we were often able to collectively solve the problems. I found that this environment was somewhere that I thrived. My background in philosophy and debate gives me the ability to think logically about complex topics and clearly communicate them to my peers. I also loved the feeling of finally understanding the answer to a problem and realizing some deep logical truth about reality. As this job entails working with your team to solve difficult problems that will deepen our understanding about the structure of the universe, it is one that I couldn't be more excited to be applying for.

As I did the research for my tutorial page I found that quantum computing was also a topic I was very interested in. Being able to speed-up calculations in parallel universes is an amazing thought to consider just in itself. However, I was even more amazed by Deutsch's explanation of the Universal Quantum Computer. He argues that quantum computers mean instead of viewing the outputs of Turing Machines as merely marks on a paper, we should instead view them as physical states of reality. As such, a Universal Quantum Computer would be able to output any physical state possible, including ones not found naturally in the universe. Ideas such as these have really got me interested in quantum computing, and it is something that I am truly inspired to learn more about.

As such, I would love to set up an interview with you to discuss how I can benefit your team. My schedule is very open the next few weeks. If you have any questions or concerns please don't hesitate to contact me and I look forward to talking with you further about how I can contribute your company.

Sincerely,

Travis Gritter

Travis Gritter

(604) 786-1597
travis.gritter@gmail.com

ca.linkedin.com/in/tgritter
travisgritter.com

Travis Gritter

Objective: To work on Quantum Computers as a Software Developer at 1QBit

Technical Skills

Languages: Java, C/C++, C#, Typescript/Javascript, SQL, CSS, Jade, HTML
Software: Node JS, Oracle, JUnit, JQuery, GitHub, AWS, Unity, JQuery
OS: MS Windows, Linux/Unix

Education

University of British Columbia - Bachelor of Arts: Honours Philosophy   *Sept 2010 - Apr 2014*
University of British Columbia - Bachelor of Computer Science   *Sept 2014 - Apr 2017*

Programming Projects

Phocas Comics - https://github.com/tgritter/PhocasComics   *March 2016*

- Designed a collective comic creation website with a team of 5 people for a Software Engineering class
- Simulated work environment through scrum meetings, sprint planning and version control
- Designed and implemented using Javascript, CSS, HTML, AWS and MongoDB

Golf Course Manager VR - https://github.com/tgritter/GolfCourseManager-VR   *November 2016*

- Created a video game as personal project in which a player must maintain a golf course
- Program available as a windows application, as well as a playable on the Oculus Gear VR Headset
- Used Unity Engine 5.0 and C# to design and build project

Quantum Computer Tutorial - https://travisgritter.com/quantum   *February 2017*

- Created a quantum computer tutorial page for anyone interested in quantum computing
- Tutorials cover topics including qubits, Grover's algorithm, and the universal quantum computer
- Created and implemented using Javascript, HTML, and CSS

The Ultimate Database - https://github.com/tgritter/TheUltimateDatabase   *April 2017*

- A personal database that collects and analyzes a wide variety of data about a user's daily
- Database includes information about a user's web history, music list, diet and daily tasks
- Gained valuable experience using the Oracle Database, SQL language, and Java

Work Experience

Shaughnessy Golf & Country Club - *Groundskeeper*   Vancouver, BC | *May 2012-Aug 2016*

- Managed daily operation of ground maintenance in team oriented environment
- Ranked #1 Golf Course and #1 Maintained Golf Course in British Columbia

Activities and Achievements

UBC Speech and Debate Society   *Sept 2011 - Present*
- 2013 Canadian National Public Speech Champion
- Extensive use of teamwork, problem-solving, critical analysis and communication skills

UBC Quidditch Team   *Sept 2015 - Present*
- Played Seeker for UBC team at several tournaments across North America
- Fastest Snitch Catch of the 2015 Rocky Mountain Rumble Quidditch Tournament

Travis Gritter
1234 Pleasant Street
Vancouver, BC V1X 2Y3
Phone: (604) 123-4567
Email: travis.gritter@my_email.com

March. 27th, 2017

Andrew Hart
Shaughnessy Golf & Country Club
4300 SW Marine Drive
Vancouver, BC V6N 4A6

Dear Andrew,

I am writing to request a letter of recommendation for a Software Developer position I am applying to at 1QBit. As you have managed me for several years, I feel that your letter would greatly improve my application.

1QBit is a Vancouver-based Tech company that using quantum computers to provide buisness solutions for their clients. They are currently looking for a software developer to assist them in building their advanced quantum algorithms. As this position is directly applicable to the Theory of Computing, which is my favourite subject within the field of Computer Science, this is a position I am very excited to be applying for.

As my previous manager, you have observed the hard work and attention to detail that I have done in doing groundskeeping for Shaughnessy. Your account of my work ethic will highlight my qualifications for this job and greatly improve my chances of being hired. As such, I would greatly appreciate it if you could assist me in writing this letter.

I have attached my resume below for you to consider. If you have any questions or clarifications that you need in order to complete this letter, please do not hesitate to let me know. Thanks for your assistance.

Sincerely,

Travis Gritter
Travis Gritter

Enclosure: Resume (Travis Gritter)

Travis Gritter
1234 Pleasant Street
Vancouver, BC V1X 2Y3
Phone: (604) 123-4567
Email: travis.gritter@my_email.com

March. 27th, 2017

Shane Gibson
Windermere Golf & Country Club
19110 Ellerslie Rd
Edmonton, AB T6W 1A5

Dear Shane,

I am writing to request a letter of recommendation for a Software Developer position I am applying to at 1QBit. As you have managed me for several years, I feel that your letter would greatly improve my application.

1QBit is a Vancouver-based Tech company that using quantum computers to provide business solutions for their clients. They are currently looking for a software developer to assist them in building their advanced quantum algorithms. As this position is directly applicable to the Theory of Computing, which is my favourite subject within the field of Computer Science, this is a position I am very excited to be applying for.

As my previous manager, you have observed the hard work and attention to detail that I have done in doing groundskeeping for Windermere. Your account of my work ethic will highlight my qualifications for this job and greatly improve my chances of being hired. As such, I would greatly appreciate it if you could assist me in writing this letter.

I have attached my resume below for you to consider. If you have any questions or clarifications that you need in order to complete this letter, please do not hesitate to let me know. Thanks for your assistance.

Sincerely,

Travis Gritter

Travis Gritter

Enclosure: Resume (Travis Gritter)

Travis Gritter
1234 Pleasant Street
Vancouver, BC V1X 2Y3
Phone: (604) 123-4567
Email: travis.gritter@my_email.com

March. 27th, 2017

Perry Belmond
Flamepac Consultants Ltd
52 Ave Wabamun
Wabamun, AB   T0E 2K0

Dear Perry,

I am writing to request a letter of recommendation for a Software Developer position I am applying to at 1QBit. As you have managed me for several years, I feel that your letter would greatly improve my application.

1QBit is a Vancouver-based Tech company that using quantum computers to provide business solutions for their clients. They are currently looking for a software developer to assist them in building their advanced quantum algorithms. As this position is directly applicable to the Theory of Computing, which is my favourite subject within the field of Computer Science, this is a position I am very excited to be applying for.

As my previous manager, you have observed the hard work and attention to detail that I have done in doing gas pipeline inspection for Flamepac. Your account of my work ethic will highlight my qualifications for this job and greatly improve my chances of being hired. As such, I would greatly appreciate it if you could assist me in writing this letter.

I have attached my resume below for you to consider. If you have any questions or clarifications that you need in order to complete this letter, please do not hesitate to let me know. Thanks for your assistance.

Sincerely,

Travis Gritter
Travis Gritter

Enclosure: Resume (Travis Gritter)