

Software Engineer

POSITION SUMMARY	
Title	Software Engineer
Division	R&D
Location	Montréal, Canada
Industry	Electronic Test and Measurement Equipment
Employment Type	Full-time
Experience	Mid- or Senior-Level

COMPANY OVERVIEW

Introspect Technology creates innovative electronic test and measurement equipment. Whether it is the next augmented reality headset or the high-bandwidth memory in a server blade, our award-winning tools are used to develop, test, and manufacture next-generation products. By eliminating traditional testing barriers, we help the leading global technology companies **make tomorrow's technology today's possibility**.

WHY INTROSPECT

DRIVE TOMORROW'S TECHNOLOGY

At Introspect, we're solving the most difficult problems encountered in electrical engineering with a passionate team that is inventing the world's most innovative test instruments. You will have the opportunity to create state-of-the-art test and measurement equipment — tools which will empower engineers to produce their finest work. You'll not only make a meaningful difference in our customers' careers, but you'll also impact the lives of people around the world with work that propels global innovation forward.

COLLABORATE WITH DRIVEN COLLEAGUES

You will work with a team of diverse and intelligent colleagues as well as with customers at the top technology companies in the world. At Introspect, you'll gain a rich, multi-disciplinary experience with colleagues and mentors committed to helping you learn and achieve your career goals.

PURSUE YOUR PASSIONS

We'll provide the support you need to do what you love and help you pursue a career which aligns with your values, passions, and aspirations. We also offer a competitive employee benefits package that includes medical and dental coverage. Join us to achieve your maximum potential, produce the best work of your career, and deliver meaningful value to customers.

JOB DESCRIPTION

Introspect Technology is seeking an experienced **Software Engineer** to join our R&D team in Montréal, Canada. In this role, you will help architect, maintain, and extend Pinetree™, a development and scripting environment used by test engineers to validate high-speed electronic interface technologies.

Working primarily in Python, you will design reusable object-oriented classes, implement data-analysis and signal-processing algorithms, translate low-level digital interface specifications into easy-to-use software suites, and contribute to GUI and scripting workflows that improve our users' experience.

The role supports technologies such as MIPI, PCI Express, DisplayPort, USB, DDR, and 100G/400G telecommunications standards, and it offers exposure to embedded system design, signal validation, numerical methods, classification techniques, and digital filtering and signal processing.

The ideal candidate is a driven, self-motivated, and highly cooperative top performer who thrives in a flexible engineering environment. The ideal candidate also demonstrates good judgment, strong communication skills, eagerness to learn and adapt, and a helpful attitude toward peers.

RESPONSIBILITIES

- Architect, design, and maintain Python software and classes for multiple product variants, with attention to behavioral interdependencies across physical products.
- Implement advanced digital communications algorithms such as forward error correction, line encoding, and scrambling using computationally efficient numerical methods.
- Translate packet-based high-speed digital specifications, such as DisplayPort, DDR, and related standards, into easy-to-use, high-level software interfaces.
- Create application-specific data analysis routines and implement software optimizations that improve performance, usability, and overall user experience.
- Define and enhance the user experience across the entire Pinetree stack, including GUI design, DLL and hardware driver integration, and installation facilities.
- Maintain and extend existing software libraries and applications.
- Implement unit test routines and contribute to the continuous improvement workflow within the software team.
- Document usage models, configuration options, and workflows for developed algorithms and software features.
- Contribute to test strategy definition for generated algorithms and prepare detailed test requirements.
- Support product collateral, especially software and hardware release notes.

QUALIFICATIONS

- Bachelor's or Master's degree in Computer Science, Software Engineering, Electrical Engineering, or a related field.
- Minimum of 3 years of professional software development experience.
- Strong programming skills, including object-oriented class design, reusable component architecture, and software distribution.
- Experience with one or more compiled or desktop application languages and frameworks, such as C/C++, C#, .NET, Qt, wxWidgets, or Visual Basic.
- Familiarity with JSON, JavaScript, and HTML5.
- Experience with software performance profiling, optimization, and memory-efficient application design.
- Knowledge of digital signal processing, numerical methods, filtering techniques, or classification algorithms.
- Ability to work with electronics technical specifications for high-speed interfaces, such as HDMI, DisplayPort, USB, DDR memory, PCIe, or MIPI.
- Experience with agile development methods.
- Excellent organization, attention to detail, and follow-through to meet quality, cost, schedule, and delivery objectives.
- Sound judgment, clear communication, willingness to learn, and a collaborative approach to supporting teammates.

APPLICATION PROCESS

Please email your resume to careers@introspect.ca with the subject line "AD-F033E-E-26203 -Software Engineer". **Applications will be considered on a rolling basis.**