

Testing, Verification, and Validation of Software Systems

As software systems, used in almost all sectors of industry, are becoming increasingly complex and critical, Dr. Lionel Briand's research interests lie in ensuring the safety, reliability and security of those complex software systems.

Dr. Briand's team is collaborating with local and international companies to conduct mutually-beneficial research with high impact.

COLLABORATING WITH INDUSTRY

Dr. Briand has worked on collaborative research projects with over 30 companies in the automotive, satellite, aerospace, energy, financial, and legal sectors over the course of his career.

The process begins with an analysis of problems, challenges, or issues in direct collaboration with industry partners, followed by an assessment of the state of the art with respect to the identified problems. A novel, practical solution is devised through research. The solution is then tested in realistic settings and refined in an iterative fashion.

The benefits of these collaborations are mutual. On the side of industry, this type of partnership can be leveraged to innovate without the tremendous risks and costs that can be associated. On the side of academia, this collaborative approach enables highly relevant and impactful research.

Dr. Lionel Briand

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RESEARCH INTERESTS

- Testing, verification, and validation of software systems, including machine learning and security aspects
- Applications of machine learning and evolutionary computing to software engineering
- Automated regulatory and legal compliance
- Model-driven development and engineering
- Requirements engineering
- Software quality assurance

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Opportunities for joint research exist at all levels; from exploratory research to contract research, from sponsoring a student to supporting a project, and many variations in between

TO GET IN TOUCH:

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RESEARCH FEATURE

ABOUT DR. BRIAND

Dr. Lionel Briand is a professor at the Faculty of Engineering at the University of Ottawa and holds the Canada Research Chair in Intelligent Software Dependability and Compliance (Tier 1).

He is an IEEE Fellow and an ACM Fellow, and has received many awards for his work, such as the IEEE Computer Society Harlan Mills Award (2012), the IEEE Reliability Engineer of the year (2013), and the ICSE Most Influential Paper awards (2015 and 2021).

To get in touch with him, interested companies can contact him directly by email at lbriand@uottawa.ca.



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