

Preface

During the 20 years that I have spent working in the close vicinity of Laurent Praly at the Centre Automatique et Systèmes, first as a student, then as colleague, and eventually as his boss, I feel that I have come to understand his philosophy.

Throughout the years, which have recently seen the emergence of a strong trend in project-oriented research and fashionable topics, the style of Laurent’s scientific work has remained unchanged. You do not change something that works. While this might appear to explain such consistency reasonably well, the underlying rationale is much more sound.

Laurent belongs to the long tradition of French engineers with a solid background in mathematics. To his colleagues and friends, Laurent’s approach to problems is uniquely his own, and thus it is like a signature: he considers the possible usefulness of the intended results, finds obvious counterexamples that would discourage most people from trying to prove the general properties, reformulates the whole question in the most concise and clear manner, and eventually delivers the mathematical proof. This process does not take him days or weeks, but rather it takes him tens of minutes. The rest of his time is simply spent in the careful intellectual construction of the perfect proof: the shortest, with the fewest assumptions and the least elaborate arguments.

This book celebrates the outstanding career of Laurent, which some people may not be aware began in the field of industrial research and development during the early days of adaptive control and model predictive control at the ADERSA company headed by J. Richalet. This rich journey surely explains how he has become such an iconic ideas-man, puzzle-solver, and pusher of frontiers, as is often heard about Laurent.

Together with Laurent, who is certainly too modest to put his name to such a statement, I hope that this book will encourage young generations, as they begin their careers in academia or in industry, to work toward long-term goals. Indeed, in my own experience, having finally isolated the hard theoretical question at the core of an industrial problem after months of difficult work, I usually found that Laurent had already worked on it and he could give me several solutions, ranging from (in his own words) “totally useless” to “stupid”, or sometimes “possibly working”,

In fact, the truth was usually much more than that, and Laurent's was the definitive answer to the problem.

The works and achievements of Laurent Praly should encourage researchers to address difficult fundamental problems, while always remaining open to new approaches, emerging ideas, and new people. Laurent Praly has given much help to many individuals throughout his career. It is a great honor for his colleagues at the Centre Automatique et Systèmes at MINES ParisTech to see contributions from these individuals in this book.

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Nicolas Petit



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