Software is omnipresent in today's life. Sophisticated appliances, once being completely mechanical or electrical, now contain software. A modern premium car carries about 100 computers to manage functionalities such as climate control, speed control, and automated parking. Similarly, air-traffic control system manages a vast net of trajectories, altitudes, and signals. Thousands of appliances are pervaded by software.

On the surface this provides a fascinating perspective to the future. But beyond the surface it is the challenge of software development. Software companies are receiving thousands of requirements for delivering new functionalities. These requirements turn into millions of lines of machine code by the hands of software developers. And all of these are carried on continuously. Continuous software development has become the prerequisite of tomorrow's smarter products. But it has also become the source of prodigious complexity that emerges overwhelmingly in developing software.

So many software projects have been fallen because of the overly complex implementations, and so many have run out of budgets because of inconceivable complexity. This thesis is an endeavor to understand this complexity, to measure and analyze its effects, importantly, to apply measurements proactively in practice, so that complexity is controlled before it escalates into inconceivable scales.

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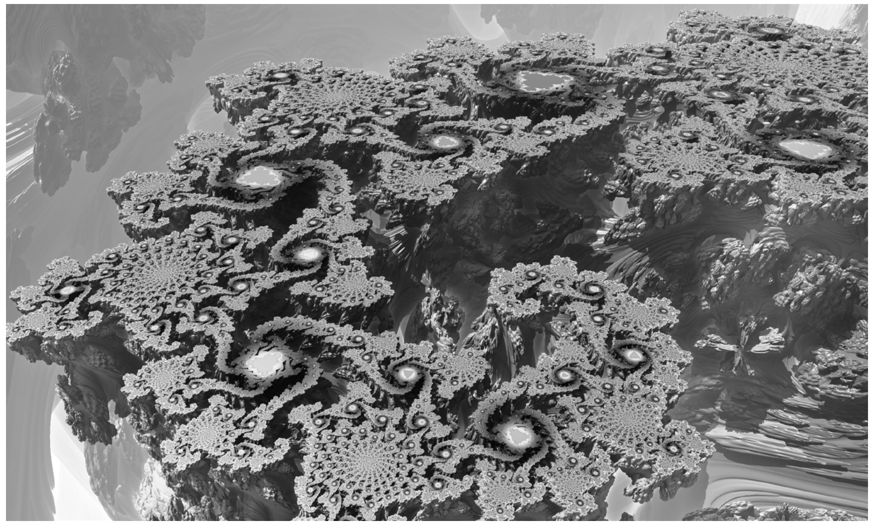

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