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Title: Lie Algebras, Enveloping Algebras and Representation Theory

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Abstract:

This thesis 'Lie Algebras, Enveloping Algebras and Representation Theory' consists of two parts. The first part describes the basics of Lie algebras and discusses the theory of semisimple Lie algebras and their root systems. The second part discusses enveloping algebras, the Poincar´e-Birkhoff-Witt Theorem and culminating in the beautiful theorem due to Ado proving that every finite-dimensional Lie algebra in characteristic 0 has a finite-dimensional faithful Lie algebra representation. The thesis report is almost self - contained and was written under the supervision of Prof. Tanusree Khandai.

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