FMfI2023 Poster Session	
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Poster title	**Formalization of Measure Theory Using Dependent Types**
Abstract	Formal verification of computer programs is best done with proof assistants, which are typically software implementations of type theory to verify mathematical proofs. Our concern is that the semantics of probabilistic programs relies on advanced measure theory whose support is lacking in the Coq proof assistant. Our project is to formalize advanced measure theory using the dependent type theory of Coq. We target the formalization of the Fundamental Theorem of Calculus as a milestone and in this poster we explain our first results in this direction: the formalization of the Radon-Nikodym theorem and of the Lebesgue-Stieltjes measure.
Short Bio	My interest is mainly on formal varification of mathematics. I also be intesting in program semantics and category theory and categorical logic. I studied formalization of analysis with Coq proof assistant in my master course. The formalization of Radon-Nikodym theorem and Hahn decomposition is among the results. Now I studying further extension of Coq library for analysis, MathComp-Analysis, and my goal is make good tool for formal varification of computer programs with advanced theory of analysis.