

Designing Globular: formal proofs as geometrical objects

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Globular is a new proof assistant in which a proof is represented as a geometrical object, in principle in any dimension. Our interface radically rejects the standard text-based input paradigm, with all user interaction via the mouse; as users click and drag parts of their object, they incrementally change its structure, and in this way build their proof. In this way, the software more closely resembles a computer drawing package than a traditional proof assistant. Globular is also web-based, to lower barriers to entry; perhaps as a result, community takeup has been strong, with the software being used 19,000 times by 4,000 users since launch in December 2015. In this talk I will focus on the design challenges we faced in developing our proof assistant, and ask the community for advice in tackling the further design hurdles we face as the proof assistant is developed.